# Accounting for Not-for-Profit Organisation 1

**Learning Objectives**

*After studying this chapter, you will be able to;*

- *Identiy the need for, and nature of accounting records relating to not-for-profit organisations;*
- *List the principal financial statements prepared by not-for-profit organisations;*
- *Prepare the Receipt, and Payment Account and Income and Expenditure Account;*
- *Prepare Income and Expenditure Account and Balance Sheet from a given Receipt and Payment Account;*
- *Explain treatment of certain peculiar items of Receipts and Payments such as subscriptions from members, special funds, legacies, sale of old fixed assets, etc.*

There are certain organisations which are set up for providing *service* to its members and the public in general. Such organisations include clubs, charitable institutions, schools, religious organisations, trade unions, welfare societies and societies for the promotion of art and culture. These organisations have service as the main objective and not the *profit* as is the case of organisations *in business. Normally, t*hese organisations do not undertake any business activity, and are managed by trustees who are fully accountable to their members and the society for the utilization of the funds raised for meeting the objectives of the organisation. Hence, they also have to maintain proper accounts and prepare the financial statement which take the form of Receipt and Payment Account; Income and Expenditure Account; and Balance Sheet. at the end of for every accounting period (normally a financial year).

This is also a legal requirement and helps them to keep track of their income and expenditure, the nature of which is different from those of the business organisations. In this chapter we shall learn about the accounting aspects relating to not-for-profit organisation.

## 1.1 Meaning and Characteristics of Not-for-Profit Organisation

Not-for-Profit Organisations refer to the organisations that are for used for the welfare of the society and are set up as charitable institutions which function without any profit motive. Their main aim is to provide service to a specific group or the public at large. Normally, they do not manufacture, purchase or sell goods and may not have credit transactions. Hence they need not maintain many books of account (as the trading concerns do) and Trading and Profit and Loss Account. The funds raised by such organisations are credited to capital fund or general fund. The major sources of their income usually are subscriptions from their members donations, grants-in-aid, income from investments, etc. The main objective of keeping records in such organisations is to meet the statutory requirement and help them in exercising control over utilisation of their funds. They also have to prepare the financial statements at the end of each accounting period (usually a financial year) and ascertain their income and expenditure and the financial position, and submit them to the statutory authority called Registrar of Societies.

*The main characteristics of such organisations are:*

1. Such organisations are formed for providing service to a specific group or public at large such as education, health care, recreation, sports and so on without any consideration of caste, creed and colour. Its sole aim is to provide service either free of cost or at nominal cost, and not to earn profit.
2. These are organised as charitable trusts/societies and subscribers to such organisation are called members.
3. Their affairs are usually managed by a managing/executive committee elected by its members.
4. The main sources of income of such organisations are: (i) subscriptions from members, (ii) donations, (iii) legacies, (iv) grant-in-aid, (v) income from investments, etc.
5. The funds raised by such organisations through various sources are credited to capital fund or general fund.
6. The surplus generated in the form of excess of income over expenditure is not distributed amongst the members. It is simply added in the capital fund.
7. The Not-for-Profit Organisations earn their reputation on the basis of their contributions to the welfare of the society rather than on the customers' or owners' satisfaction.
8. The accounting information provided by such organisations is meant for the present and potential contributors and to meet the statutory requirement.

## 1.2 Accounting Records of Not-for-Profit Organisations

As stated earlier, normally such organisations are not engaged in any trading or business activities. The main sources of their income are subscriptions from members, donations, financial assistance from government and income from investments. Most of their transactions are in *cash* or through the bank. These institutions are required by law to keep proper accounting records and keep proper control over the utilization of their funds. This is why they usually keep a cash book in which all receipts and payments are duly recorded. They also maintain a ledger containing the accounts of all incomes, expenses, assets and liabilities which facilitates the preparation of financial statements at the end of the accounting period. In addition, they are required to maintain a stock register to keep complete record of all fixed assets and the consumables.

They do not maintain any capital account. Instead they maintain capital fund which is also called general fund that goes on accumulating due to surpluses generated, life membership fee, donation, legacies, etc. received from year to year. In fact, a proper system of accounting is desirable to avoid or minimise the chances of misappropriations or embezzlement of the funds contributed by the members and other donors.

*Final Accounts or Financial Statements:* The Not-for-Profit Organisations are also required to prepare financial statements at the end of the each accounting period. Although these organisations are non-profit making entities and they are not required to make Trading and Profit & Loss Account but it is necessary to know whether the income during the year was sufficient to meet the expenses or not. Not only that they have to provide the necessary financial information to members, donors, and contributors and also to the Registrar of Societies. For this purpose, they have to prepare their final accounts at the end of the accounting period and the general principles of accounting are fully applicable in their preparation as stated earlier, the final accounts of a 'not-for-profit organisation' consist of the following:

(i) Receipt and Payment Account
(ii) Income and Expenditure Account, and
(iii) Balance Sheet.

The Receipt and Payment Account is the summary of cash and bank transactions which helps in the preparation of Income and Expenditure Account and the Balance Sheet. Besides, it is a legal requirement as the Receipts and Payments Account has also to be submitted to the Registrar of Societies along with the Income and Expenditure Account, and the Balance Sheet.

Income and Expenditure Account is akin to Profit and Loss Account. The Not-for-Profit Organisations usually prepare the Income and Expenditure Account and a Balance Sheet with the help of Receipt and Payment Account. However, this does not imply that they do not make a trial balance. In order to check the accuracy of the ledger accounts, they also prepare a trial balance which facilitates the preparation of accurate Receipt and Payment Account as well as the Income and Expenditure Account and the Balance Sheet.

In fact, if an organisation has followed the double entry system they must prepare a trial balance for checking the accuracy of the ledger accounts and it will also facilitate the preparation of Receipt and Payment account. Income and Expenditure Account and the Balance Sheet.

## 1.3 Receipt and Payment Account

It is prepared at the end of the accounting year on the basis of cash receipts and cash payments recorded in the cash book. It is a summary of cash and bank transactions under various heads. For example, subscriptions received from the members on different dates which appear on the debit side of the cash book, shall be shown on the receipts side of the Receipt and Payment Account as one item with its total amount. Similarly, salary, rent, electricity charges paid from time to time as recorded on the credit side of the cash book but the total salary paid, total rent paid, total electricity charges paid during the year appear on the payment side of the Receipt and Payment Account. Thus, Receipt and Payment Account gives summarised picture of various receipts and payments, irrespective of whether they pertain to the current period, previous period or succeeding period or whether they are of capital or revenue nature. It may be noted that this account does not show any non cash item like depreciation. The opening balance in Receipt and Payment Account represents cash in hand/cash at bank which is shown on its receipts side and the closing balance of this account represents cash in hand and bank balance as at the end of the year, which appear on the credit side of the Receipt and Payment Account. However, if it is bank overdraft at the end it shall be shown on its debit side as the last item. Let us look at the cash book of Golden Cricket Club given in the example to show how the total amount of each item of receipt and payment has been worked out.

***Example 1***

**Golden Cricket Club**
**Cash Book (Columnar)**

*Dr.* *Cr.*

| *Date* | *Receipts* | *L.F.* | *Bank Amount (Rs.)* | *Office Amount (Rs.)* | *Date* *2014* | *Payments* | *L.F.* | *Bank Amount (Rs.)* | *Office Amount (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| *2014* | | | | | *2014* | | | | |
| April 1 | Balance b/d | | 35,000 | 20,000 | April 15 | Insurance premium | | 15,000 | |
| April 10 | Subscriptions | | 1,20,000 | | May 12 | Printing and stationery | | 10,750 | |
| April 10 | Entrance fees | | 13,000 | | May 20 | Postage and courier fees | | | 430 |
| May 20 | Life membership fees | | 12,000 | | June 16 | Telephone expenses | | | 810 |
| June 12 | Locker rent | | | 42,000 | July 10 | Wages and salaries | | | 22,000 |
| July 23 | Life membership fees | | 8,000 | | July 15 | Rates and Taxes | | 17,000 | |
| Aug. 20 | Donation for building | | 60,000 | | July 30 | Govt. securities | | 1,00,000 | |
| Sept. 13 | Subscriptions (2013-14) | | 30,000 | | Aug. 13 | Printing and stationery | | 15,000 | |
| Sept. 13 | Subscription | | 45,000 | | Aug. 15 | Postage and courier service | | | 480 |
| | | | | | Sept. 10 | Lighting | | 12,250 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Sept. 14 | Entrance fees | | 10,000 | | Sept 13 | Telephone expenses | | | 830 |
| Nov. 9 | Subscription | | 35,000 | | Oct. 1 | Wages and salaries | | 10,000 | 12,000 |
| | | | | | Oct. 18 | Printing and stationery | | 13,000 | |
| Nov. 9 | Subscription (2015-16) | | 10,000 | | Oct. 31 | Govt. securities | | 1,00,000 | |
| 2015 | | | | | Dec. 31 | Wages and Salaries | | 22,000 | |
| Feb. 07 | Subscription | | 25,000 | | *2015* | | | | |
| | | | | | Jan. 21 | Courier charges | | | 240 |
| Mar. 28 | Interest on government securities | | 18,000 | | Feb. 2 | Telephone expenses | | | 960 |
| | | | | | Mar. 10 | Postage and Courier fees | | | 850 |
| | | | | | Mar. 27 | Lighting | | 14,000 | |
| | | | | | Mar. 27 | Wages and Salaries | | 22,000 | |
| | | | | | Mar. 31 | Balance c/d | | 70,000 | 23,400 |
| | | | **4,21,000** | **62,000** | | | | **4,21,000** | **62,000** |

**Part A**

*Item wise Aggregation of various Receipts*

Subscriptions (2014–2015)

| *Date* | *Amount (Rs.)* |
|---|---|
| April 10, 2014 | 1,20,000 |
| Sept. 13, 2014 | 45,000 |
| Nov. 9, 2014 | 35,000 |
| Feb. 7, 2015 | 25,000 |
| **Total** | **2,25,000** |

Subscriptions (2013–14)

| *Date* | *Amount (Rs.)* |
|---|---|
| Sept. 13, 2014 | 30,000 |
| **Total** | **30,000** |

Subscription (2015–16)

| *Date* | *Amount (Rs)* |
|---|---|
| Nov. 9, 2014 | 10,000 |
| **Total** | **10,000** |

Entrance Fees

| *Date* | *Amount (Rs)* |
|---|---|
| April 10, 2014 | 13,000 |
| Sept.14, 2014 | 10,000 |
| **Total** | **23,000** |

Locker Rent

| *Date* | *Amount (Rs)* |
|---|---|
| June 12, 2014 | 42,000 |
| **Total** | **42,000** |

Life Membership fee

| *Date* | *Amount (Rs)* |
|---|---|
| May 20, 2014 | 12,000 |
| July 23, 2014 | 8,000 |
| **Total** | **20,000** |

Donation for Buildings

| *Date* | *Amount (Rs)* |
|---|---|
| Aug. 20, 2014 | 60,000 |
| **Total** | **60,000** |

Interest on Government securities

| *Date* | *Amount (Rs)* |
|---|---|
| March 28, 2015 | 18,000 |
| **Total** | **18,000** |

**Part B**

*Item wise Aggregation of various Payments*

Insurance Premium

| *Date* | *Amount (Rs)* |
|---|---|
| April 15, 2014 | 15,000 |
| **Total** | **15,000** |

Printing and Stationery

| *Date* | *Amount (Rs.)* |
|---|---|
| May 12, 2014 | 10,750 |
| Aug. 13, 2014 | 15,000 |
| Oct. 18, 2014 | 13,000 |
| **Total** | **38,750** |

Lighting

| *Date* | *Amount (Rs.)* |
|---|---|
| Sept. 10, 2014 | 12,250 |
| March 27, 2015 | 14,000 |
| **Total** | **26,250** |

Telephone Expenses

| *Date* | *Amount (Rs.)* |
|---|---|
| June 16, 2014 | 810 |
| Sept. 13, 2014 | 830 |
| Feb. 2, 2015 | 960 |
| **Total** | **2,600** |

Rates and Taxes

| *Date* | *Amount (Rs.)* |
|---|---|
| July 15, 2014 | 17,000 |
| **Total** | **17,000** |

Government Securities

| *Date* | *Amount (Rs.)* |
|---|---|
| July 30, 2014 | 1,00,000 |
| Oct. 31, 2014 | 1,00,000 |
| **Total** | **2,00,000** |

Wages and Salaries

| *Date* | *Amount (Rs.)* |
|---|---|
| July 10, 2014 | 22,000 |
| Oct. 1, 2014 | 22,000 |
| Dec. 31, 2014 | 22,000 |
| March 30, 2015 | 22,000 |
| **Total** | **88,000** |

Postage and Courier Service

| *Date* | *Amount (Rs.)* |
|---|---|
| May 20, 2014 | 430 |
| Aug. 15, 2014 | 480 |
| Jan. 21, 2015 | 240 |
| March 10, 2015 | 850 |
| **Total** | **2,000** |

The above data can also be shown in the form of the respective accounts in the ledger. A detailed illustrative list of items of receipts and payments is given in figure 1.

**Figure 1**

| *Receipts* | *Payments* |
|---|---|
| 1. Donations<br>(a) General<br>(b) Specific purpose<br>2. Entrance Fees<br>3. Legacies<br>4. Sale of Investments<br>5. Sale of Fixed Assets<br>6. Subscriptions from Members<br>7. Life Membership Fees<br>8. Sale of old Newspapers<br>9. Sale of Old Sports Material<br>10. Interest on Fixed Deposits<br>11. Interest/ Dividend on Investments<br>12. Proceed from Charity Shows<br>13. Sale of Scrap<br>14. Grant-in-aid<br>15. Interest/Dividend on Specific Fund Investments<br>16. Miscellaneous Receipts. | 1. Purchase of Fixed Assets<br>2. Purchase of Sports Material<br>3. Investment in Securities<br>4. Printing and Stationery<br>5. Postage and Courier Charges<br>6. Advertisements<br>7. Wages and Salary<br>8. Honorarium<br>9. Telephone Charges<br>10. Electricity and Water Charges<br>11. Repairs and Renewals<br>12. Upkeep of Play Ground<br>13. Conveyance Charges<br>14. Subscription for Periodicals<br>15. Audit Fees<br>16. Entertainment Expenses<br>17. Municipal Taxes<br>18. Charity<br>19. Insurance |

Receipt and Payment Account is given below:

**Receipt and Payment Account for the year ending ————-**

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d | | Balance b/d (Bank overdraft) | xxx |
| Cash in Hand | xxx | Wages and Salaries | xxx |
| Cash at Bank | xxx | Rent | xxx |
| Subscriptions | xxx | Rates and Taxes | xxx |
| General Donations | xxx | Insurance | xxx |
| Sale of newspaper/ | xxx | Printing and Stationery | xxx |
| periodicals/waste paper | | Postage and courier | xxx |
| Sale of old sports materials | xxx | Advertisement | xxx |
| Interest on fixed deposits | | Sundry expenses | xxx |
| Interest/Dividend on general | xxx | Telephone charges | xxx |
| investments | | Entertainment expenses | xxx |
| Locker Rent | xxx | Audit fees | xxx |
| Sale of scraps | xxx | Honorarium | xxx |
| Proceeds from charity show | xxx | Repair and Renewals | xxx |
| Miscellaneous receipts | xxx | Upkeep of ground | xxx |
| Grant-in-aid | xxx | Conveyance | xxx |
| Legacies | xxx | Newspapers and Periodicals | xxx |
| Specific Donations | xxx | Purchases of Assets | xxx |
| Sale of Investments | xxx | Purchase of Investments | xxx |
| Sale of Fixed Assets | xxx | Balance c/d | xxx |

| | | | |
|---|---|---|---|
| Life membership fees | xxx | Cash in hand | xxx |
| Entrance fees | xxx | Cash at Bank* | xxx |
| Receipts on account of specific purpose funds | xxx | | |
| Interest on specific funds' investments | xxx | | |
| Balance b/d (Bank Overdraft)* | xxx | | |
| | xxxxx | | xxxxx |

**Fig. 1.1:** *Format of Receipt and Payment Account*

* There will be either of the two amounts i.e., each at bank or bank overdraft, not both.

It may be noted that the receipts side of the Receipt and Payment Account gives a list of revenue receipts (for past, current and future periods) as well as capital receipts. Similarly, the payments side of the Receipts and Payments Account lists the Revenue Payments (for past, current and future periods) as well as Capital Payments.

### *1.3.1 Salient Features*

1. It is a summary of the cash book. Its form is identical with that of simple cash book (without discount and bank columns) with debit and credit sides. Receipts are recorded on the debit side while payments are entered on the credit side.
2. It shows the total amounts of all receipts and payments irrespective of the period to which they pertain . For example, in the Receipt and Payment account for the year ending on March 31, 2016, we record the total subscriptions received during 2015–16 including the amounts related to the years 2014–2015 and 2016-2017. Similarly, taxes paid during 2015–16 even if they relate to the years 2014–15 and 2016–2017.
3. It includes all receipts and payments whether they are of capital nature or of revenue nature.
4. No distinction is made in receipts/payments made in cash or through bank. With the exception of the opening and closing balances, the total amount of each receipt and payment is shown in this account.
5. No non-cash items such as depreciation outstanding expenses accrued income, etc. are shown in this account.
6. It begins with opening balance of cash in hand and cash at bank (or bank overdraft) and closes with the year end balance of cash in hand/ cash at bank or bank overdraft. In fact, the closing balance in this account (difference between the total amount of receipts and payments) which is usually a debit balance reflects cash in hand and cash at bank unless there is a bank overdraft.

### 1.3.2 *Steps in the Preparation of Receipt and Payment Account*

1. Take the opening balances of cash in hand and cash at bank and enter them on the debit side. In case there is bank overdraft at the begining of the year, enter the same on the credit side of this account.
2. Show the total amounts of all receipts on its debit side irrespective of their nature (whether capital or revenue) and whether they pertain to past, current and future periods.
3. Show the total amounts of all payments on its credit side irrespective of their nature (whether capital or revenue) and whether they pertain to past, current and future periods.
4. None of the receivable income and payable expense is to be entered in this account as they do not involve inflow or outflow of cash.
5. Find out the difference between the total of debit side and the total of credit side of the account and enter the same on the credit side as the closing balance of cash/bank. In case, however, the total of the credit side is more than that of the total of the debit side, show the difference on the debit as bank overdraft and close the account.

From the following information based on the data assimilated from the cash book given in *example 1*, at page 4, the Receipt and Payment Account of Golden Cricket Club for the year ended on March 31, 2015 will be prepared as follows:

**Summary of Cash Book**

| *Details* | | *Amount (Rs.)* |
|---|---|---|
| Cash in hand as on April 1, 2014 | | 20,000 |
| Cash at bank as on April 1, 2014 | | 35,000 |
| Subscription: | Rs. | |
| 2013-14 | 30,000 | |
| 2014-15 | 2,25,000 | |
| 2015-16 | 10,000 | 2,65,000 |
| Donation for Building | | 60,000 |
| Entrance fees | | 23,000 |
| Life membership fee | | 20,000 |
| Printing and Stationery | | 38,750 |
| Lighting | | 26,250 |
| Rates and Taxes | | 17,000 |
| Telephone charges | | 2,600 |
| Postage and courier | | 2,000 |
| Wages and Salaries | | 88,000 |
| Insurance Premium | | 15,000 |
| Interest on government securities | | 18,000 |
| Locker rent | | 42,000 |
| Purchase of government securities | | 2,00,000 |
| Cash in hand as on March 31, 2015 | | 23,400 |
| Cash at bank as on March 31, 2015 | | 70,000 |

**Receipt and Payment Account for the year ending March 31, 2015**

*Dr.* *Cr.*

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Cash in hand as on April 1, 2014 | | 20,000 | Printing and Stationery | 38,750 |
| | | | Lighting | 26,250 |
| Cash at bank as on April 1, 2014 | | 35,000 | Rates and Taxes | 17,000 |
| | | | Telephone charges | 2,600 |
| Subscription: | | | Postage and Courier | 2,000 |
| 2013–14 | 30,000 | | Wages and Salaries | 88,000 |
| 2014–15 | 2,25,000 | | Insurance Premium | 15,000 |
| 2015–16 | 10,000 | 2,65,000 | Purchase of govt. securities | 2,00,000 |
| Donation for building | | 60,000 | Cash in hand as on March 31, 2015 | 23,400 |
| Entrance fees | | 23,000 | | |
| Life membership fee | | 20,000 | Cash at bank as on March 31, 2015 | 70,000 |
| Interest on investment in Government securities | | 18,000 | | |
| Locker rent | | 42,000 | | |
| | | **4,83,000** | | **4,83,000** |

***Illustration 1***

From the following particulars relating to Silver Point, prepare a Receipt and Payment account for the year ending March 31, 2017.

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Opening cash balance | | 1,000 | Sale of old sports materials | 1,200 |
| Opening bank balance | | 7,200 | Donation received for pavilion | 4,600 |
| Subscriptions collected for: | | | Rent paid | 3,000 |
| 2015-16 | Rs. 500 | | Sports materials purchases | 4,800 |
| 2016-17 | Rs. 7,600 | | Purchase of refreshments | 600 |
| 2017-18 | Rs. 900 | 9,000 | Expenses for maintenance of tennis court | 2,000 |
| Sale of refreshments | | 1,000 | | |
| Entrance fees received | | 1,000 | Salary paid | 2,500 |
| | | | Tournament expenses | 2,400 |
| | | | Furniture purchased | 1,500 |
| | | | Office expenses | 1,200 |
| | | | Closing cash in hand | 400 |

***Solution***

**Books of Silver Point**
**Receipt and Payment Account**
**for the year ending March 31, 2017**

*Dr.* *Cr.*

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance b/d | | | Rent | 3,000 |
| Cash | | 1,000 | Sports materials purchased | 4,800 |
| Bank | | 7,200 | Purchase of refreshments | 600 |
| Subscriptions | | | Maintenance expenses for tennis court | 2,000 |
| 2015-16 | 500 | | | |
| 2016-17 | 7,600 | | Salary | 2,500 |
| 2017-18 | 900 | 9,000 | Tournament expenses | 2,400 |
| Sale of refreshments | | 1,000 | Furniture purchased | 1,500 |
| Entrance fees | | 1,000 | Office expenses | 1,200 |
| Sale of old sports materials | | 1,200 | Balance c/d | |
| Donation for pavilion | | 4,600 | Cash | 400 |
| | | | Bank (balancing figure) | 6,600 |
| | | 25,000 | | 25,000 |

## 1.4 Income and Expenditure Account

It is the summary of income and expenditure for the accounting year. It is just like a profit and loss account prepared on accrual basis in case of the business organisations. It includes only revenue items and the balance at the end represents surplus or deficit. The Income and Expenditure Account serves the same purpose as the profit and loss account of a business organisation does. All the revenue items relating to the current period are shown in this account, the expenses and losses on the expenditure side and incomes and gains on the income side of the account. It shows the net operating result in the form of surplus (i.e. excess of income over expenditure) or deficit (i.e. excess of expenditure over income), which is transferred to the capital fund shown in the balance sheet.

The Income and Expenditure Account is prepared on accrual basis with the help of Receipts and Payments Account along with additional information regarding outstanding and prepaid expenses and depreciation etc. Hence, many items appearing in the Receipts and Payments need to be adjusted. For example, as shown in Example 1, (Page No. 10) subscription amount of Rs.2, 65,000 received during the year 2014-15 appearing on the receipts side of the Receipt and Payment Account includes receipts for the periods other than the current period. But the subscription amount of Rs. 2,25,000 pertaining to the current year only will be shown as income in Income and Expenditure Account for the year 2014-15.

### *1.4.1 Steps in the Preparation of Income and Expenditure Account*

Following steps may be helpful in preparing an Income and Expenditure Account from a given Receipt and Payment Account:

1. *Persue* the Receipt and Payment Account thoroughly.
2. Exclude the opening and closing balances of cash and bank as they are not an income.
3. Exclude the capital receipts and capital payments as these are to be shown in the Balance Sheet.
4. Consider only the revenue receipts to be shown on the income side of Income and Expenditure Account. Some of these need to be adjusted by excluding the amounts relating to the preceding and the succeeding periods and including the amounts relating to the current year not yet received.
5. Take the revenue expenses to the expenditure side of the Income and Expenditure Account with due adjustments as per the additional information provided relating to the amounts received in advance and those not yet received.
6. Consider the following items not appearing in the Receipt and Payment Account that need to be taken into account for determining the surplus/ deficit for the current year :
   (a) Depreciation of fixed assets.
   (b) Provision for doubtful debts, if required.
   (c) Profit or loss on sale of fixed assets.

Now you will observe how the income and expenditure account is prepared from the receipts and payments account given in example 1, on page 10.

**Income and Expenditure Account**
**for the year ending on March 31, 2015**

*Dr.* *Cr.*

| *Expenditure* | *Amount (Rs.)* | *Income* | *Amount (Rs.)* |
|---|---|---|---|
| Printing and Stationery | 38,750 | Subscriptions | 2,25,000 |
| Lighting | 26,250 | Entrance fees | 23,000 |
| Rates and Taxes | 17,000 | Interest on investment | 18,000 |
| Telephone charges | 2,600 | in government securities | |
| Postage and courier charges | 2,000 | Locker rent | 42,000 |
| Wages and Salaries | 88,000 | | |
| Insurance Premium | 15,000 | | |
| Surplus (*Excess of income over expenditure*) | 1,18,400 | | |
| | **3,08,000** | | **3,08,000** |

*Note that-*

1. Opening and closing cash/bank balances have been excluded.
2. Payment for purchase of Government securities being capital expenditure has been excluded.
3. Amount of subscriptions received for the year 2013-14 and 2015-16 have been excluded.
4. Life membership fee is an item of capital receipt and so excluded.
5. Donation for building is a receipt for a specific purpose and so excluded.

### *Illustration 2*

From the Receipt and Payment Account given below, prepare the Income and Expenditure Account of Clean Delhi Club for the year ended March 31, 2017.

**Receipt and Payment Account for the year ending March 31, 2017**

*Dr.* *Cr.*

| *Receipts* | *Amount (Rs.)* | *Payments* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance b/d (Cash in hand) | 3,200 | Salary | | 1,500 |
| Subscriptions | 22,500 | Rent | | 800 |
| Entrance Fees | 1,250 | Electricity | | 3,500 |
| Donations | 2,500 | Taxes | | 1,700 |
| Rent of hall | 750 | Printing and Stationery | | 380 |
| Sale of investments | 3,000 | Sundry expenses | | 920 |
| | | Books purchased | | 7,500 |
| | | Govt. bonds purchased | | 10,000 |
| | | Fixed deposit with bank (on 31.03.2017) | | 5,000 |
| | | Balance c/d | | |
| | | Cash in hand | 400 | |
| | | Cash at bank | 1,500 | 1,900 |
| | **33,200** | | | **33,200** |

### *Solution*

**Books of Clean Delhi Club**
**Income and Expenditure Account for the year ending March 31, 2017**

*Dr.* *Cr.*

| *Expenditure* | *Amount (Rs.)* | *Income* | *Amount (Rs.)* |
|---|---|---|---|
| Salary | 1,500 | Subscriptions | 22,500 |
| Rent | 800 | Entrance fees | 1,250 |
| Electricity | 3,500 | Donation | 2,500 |
| Taxes | 1,700 | Rent of hall | 750 |
| Printing & Stationery | 380 | | |
| Sundray Expenses | 920 | | |
| Surplus (excess of income over expenditure) | 18,200 | | |
| | **27,000** | | **27,000** |

### *Illustration 3*

From the following Receipt and Payment Account for the year ending March 31, 2015 of Negi's Club, prepare Income and Expenditure Account for the same period:

**Receipt and Payment Account for the year ending March 31, 2015**

*Dr.* *Cr.*

| *Expenditure* | | *Amount (Rs.)* | *Income* | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance c/d Bank | | 25,000 | Purchase of furniture (1.7.14) | 5,000 |
| Subscriptions | | | Salaries | 2,000 |
| 2013 | 1,500 | | Telephone expenses | 300 |
| 2014 | 10,000 | | Electricity charges | 600 |
| 2015 | 500 | 12,000 | Postage and Stationery | 150 |
| Donation | | 2,000 | Purchase of books | 2,500 |
| Hall rent | | 300 | Entertainment expenses | 900 |
| Interest on bank deposits | | 450 | Purchase of 5% government papers (1.7.14) | 8,000 |
| Entrance fees | | 1,000 | Miscellaneous expenses | 600 |
| | | | Balance c/d: | |
| | | | Cash | 300 |
| | | | Bank | 20,400 |
| | | **40,750** | | **40,750** |

The following additional information is available:

(i) Salaries outstanding – Rs. 1,500;
(ii) Entertainment expenses outstanding – Rs. 500;
(iii) Bank interest receivable – Rs. 150;
(iv) Subscriptions accrued – Rs. 400;
(v) 50 per cent of entrance fees is to be capitalised;
(vi) Furniture is to be depreciated at 10 per cent per annum.

### *Solution*

**Books of Negi's Club**
**Income and Expenditure Account for the year ending 31.3.2015**

*Dr.* *Cr.*

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Salaries | 2,000 | | Subscriptions | | 10,400 |
| *Add:* Outstanding | 1,500 | 3,500 | Donation | | 2,000 |
| Telephone expenses | | 300 | Entrance Fees (50% of Rs. 1,000) | | 500 |
| Electricity charges | | 600 | Bank interest | 450 | |
| Postage and Stationery | | 150 | *Add:* Outstanding interest | 150 | 600 |

| | | | | |
|---|---|---|---|---|
| Entertainment expenses | 900 | | Interest on investment | 200 |
| *Add:* Outstanding expenses | 500 | 1,400 | Hall rent | 300 |
| Miscellaneous expenses | | 600 | | |
| Depreciation on furniture | | 375 | | |
| Surplus (Excess of Income over Expenditure) | | 7,075 | | |
| | | **14,000** | | **14,000** |

### *1.4.2 Distinction between Income and Expenditure Account and Receipt and Payment Account*

Based upon discussion made in regard to the Receipts and Payments Account and the Income and Expenditure Account we make the distinction between Income and Expenditure Account and Receipts and Payments Account in the tabular form:

| **Basis of distinction Account** | **Income and Expenditure** | **Receipt and Payment Account** |
|---|---|---|
| Nature | It is like as profit and loss account. | It is the summary of the cash book. |
| Nature of Items | It records income and expenditure of *revenue* nature only. | It records receipts and payments of *revenue as well as capital* nature. |
| Period | Income and expenditure items relate only to the current period. | Receipts and payments may also relate to preceding and succeeding periods. |
| Debit side | Debit side of this account records expenses and losses. | Debit side of this account records the receipts. |
| Credit side | Credit side of this account records income and gains. | Credit side of this account records the payments. |
| Depreciation | Includes depreciation. | Does not includes depreciation. |
| Opening Balance | There is no opening balance. | Balance in the beginning represents cash in hand /cash at bank or overdraft at the beginning. |
| Closing Balance | Balance at the end represents excess of income over expenditure or vice-versa. | Balance at the end represents cash in hand at the end and bank balance (or bank overdraft). |

## 1.5 Balance Sheet

'Not-for-Profit' Organisations prepare Balance Sheet for ascertaining the financial position of the organisation. The preparation of their Balance Sheet is on the same pattern as that of the business entities. It shows assets and liabilities as at the end of the year. Assets are shown on the right hand side and the liabilities on the left hand side. However, there will be a Capital Fund or General Fund in place of the Capital and the surplus or deficit as per Income and Expenditure Account which is either added to/deducted from the capital fund, as the case may be. It is also a common practice to add some of the capitalised items like legacies, entrance fees and life membership fees directly in the capital fund.

Besides the Capital or General Fund, there may be other funds created for specific purposes or to meet the requirements of the contributors/donors such as building fund, sports fund, etc. Such funds are shown separately in the liabilities side of the balance sheet.

Some times it becomes necessary to prepare Balance Sheet as at the beginning of the year in order to find out the opening balance of the capital/general fund.

### *1.5.1 Preparation of Balance Sheet*

The following procedure is adopted to prepare the *Balance Sheet*:

1. Take the Capital/General Fund as per the opening balance sheet and add surplus from the Income and Expenditure Account. Further, add entrance fees, legacies, life membership fees, etc. received during the year.
2. Take all the fixed assets (not sold/discarded/or destroyed during the year) with additions (from the Receipts and Payments account) after charging depreciation (as per Income and Expenditure account) and show them on the assets side.
3. Compare items on the receipts side of the Receipts and Payments Account with income side of the Income and Expenditure Account. This is to ascertain the amounts of: (a) subscriptions due but not yet received: (b) incomes received in advance; (c) sale of fixed assets made during the year; (d) items to be capitalised (i.e. taken directly to the Balance Sheet) e.g. legacies, interest on specific fund investment and so on.
4. Similarly compare, items on the payments side of the Receipt and Payment Account with expenditure side of the Income and Expenditure Account. This is to ascertain the amounts if: (a) outstanding expenses; (b) prepaid expenses; (c) purchase of a fixed asset during the year; (d) depreciation on fixed assets; (e) stock of consumable items like stationery in hand; (f) Closing balance of cash in hand and cash at bank as, and so on.

A proforma Balance Sheet is given for the proper understanding of preparing the balance sheet.

**Balance Sheet of as on ...............**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| *Capital fund*: | | | |
| Opening Balance | ...... | *Cash in hand and /or Cash at Bank* | ...... |
| *Add:* Surplus | | *Outstanding Incomes* | ...... |
| OR | | *Prepaid Expenses* | ...... |
| *Less:* Deficit | | *Stock of Consumable Items*: | |
| *Add:* Capitalised Income of the Current Year on account of: | ...... | Previous Balance | |
| Legacies | ...... | *Add:* Purchases in the current period | |
| Entrance Fees | ...... | | |
| Life Membership Fees | ...... | *Less:* Value consumed during the period | ...... |
| Closing Balance | ...... | | |
| *Special Fund/Donations*: | | Previous Balance | ...... |
| Previous Balance (If any ) | | *Add:* Purchases in the current period | |
| *Add:* Receipts for the item during the period | | | |
| *Add:* Income earned on fund/Donations' Investments | | *Less:* Book Value of the Asset sold/disposed off | |
| | | *Closing Balance* | ...... |
| *Less:* Expenses paid out of fund/Donations | | | |
| Net Balance | ...... | | |
| *Creditors* for Purchases and/or supplies | ...... | | |
| *Bank Overdraft* | ...... | | |
| *Outstanding Expenses*: | | | |
| *Income received in Advance* | ...... | | |
| | ...... | | ...... |

**Fig. 1.2:** *Proforma Balance Sheet*

### *Illustration 4*

From the following Receipt and Payment Account and additional information relating to Excellent Cricket Club, prepare Income and Expenditure Account for the year ended March 31, 2015 and Balance Sheet as on date.

*Dr.* *Cr.*

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d (Cash in Hand) | 18,000 | Balance b/d (bank overdraft) | 16,000 |
| Member's subscriptions | 2,50,000 | Upkeep of field and pavilion | 1,15,000 |
| Member's admission fee | 15,000 | Tournament expenses | 40,000 |
| Sale of old sports materials | 2,500 | Rates and Insurance | 10,000 |
| Hire of ground | 28,000 | Telephone | 3,500 |
| Subscription for tournament | 60,000 | Postage and Courier charges | 4,000 |
| Life membership fee | 20,000 | Printing and Stationery | 26,000 |
| Donations | 6,00,000 | Miscellaneous expenses | 4,400 |

| | | | |
|---|---|---|---|
| | | Secretary's honorarium | 30,000 |
| | | Grass seeds | 2,600 |
| | | Investments | 6,00,000 |
| | | Purchase of sports materials | 68,000 |
| | | Balance c/d | 74,000 |
| | **9,93,500** | | **9,93,500** |

Assets at the beginning of the year were:

| | Rs. |
|---|---|
| Play ground | 5,00,000 |
| Cash in hand | 18,000 |
| Stock of sports materials | 85,000 |
| Printing and Stationery | 11,000 |
| Subscriptions receivable | 28,000 |

Donations and Surplus on account of tournament are to be kept in Reserve for a permanent pavilion. Subscriptions due on March 31, 2015 were Rs. 42,000. Write-off fifty per cent of sports materials and thirty per cent of printing and stationery.

### *Solution*

**Books of Excellent Cricket Club**

**Income and Expenditure Account for the year ending on March 31, 2015**

*Dr.* *Cr.*

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Upkeep of field and pavilion | | 1,15,000 | Subscriptions | 2,50,000 | |
| Rates and Insurance | | 10,000 | *Add:* Outstanding | | |
| Telephone | | 3,500 | (closing) | 42,000 | |
| Postage and Courier charges | | 4,000 | | 2,92,000 | |
| Printing & stationery | 26,000 | | *Less:* Outstanding | | |
| *Add:* Opening stock | 11,000 | | (opening) | 28,000 | 2,64,000 |
| Available for use | 37,000 | | Admission fees | | 15,000 |
| *Less:* Closing stock | 25,900 | 11,100 | Sale of old sports material | | 2,500 |
| Stationery consumed | | 4,400 | Rent of hall | | 28,000 |
| Miscellaneous expenses | | 30,000 | | | |
| Secretary's honorarium | | 2,600 | | | |
| Grass seeds | | | | | |
| Sports materials consumed: | | | | | |
| Opening stock | 85,000 | | | | |
| *Add:* Purchases | 68,000 | | | | |
| | 1,53,000 | | | | |
| *Less:* Closing stock | 76,500 | 76,500 | | | |
| *Surplus* | | 52,400 | | | |
| (Excess of income over expenditure) | | | | | |
| | | **3,09,500** | | | **3,09,500** |

*Note:* Since the opening balance of the capital fund is not given, the same has been ascertained by preparing opening balance sheet.

**Balance Sheet of Excellent Cricket Club as on March 31, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capital Fund | 6,26,000 | | Cash in hand | 74,000 |
| *Add:* Surplus | 52,400 | | Outstanding subscriptions | 42,000 |
| | 6,78,400 | | Stock of sports materials | 76,500 |
| *Add:* Life membership | | | Stock of printing | 25,900 |
| fee | 20,000 | 6,98,400 | and stationery | |
| Pavilion Fund: | | | Investments | 6,00,000 |
| Surplus from Tournament | | | Play ground | 5,00,000 |
| (Rs.60,000-40,000) | 20,000 | | | |
| Donation | 6,00,000 | 6,20,000 | | |
| | | **13,18,400** | | **13,18,400** |

**Balance Sheet of Excellent Cricket Club as on March 31, 2014**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Bank overdraft | 16,000 | Cash in hand | 18,000 |
| Capital/General fund | | Outstanding subscription | 28,000 |
| (balancing figure) | 6,26,000 | Stock of sports materials | 85,000 |
| | | Printing and Stationery | 11,000 |
| | | Play ground | 5,00,000 |
| | **6,42,000** | | **6,42,000** |

**Test your Understanding – I**

State with reasons whether the following statements are TRUE or FALSE:

(i) Receipt and Payment Account is a summary of all capital receipts and payments.
(ii) If there appears a sports fund, the expenses incurred on sports activities will be shown on the debit side of Income and Expenditure Account.
(iii) The balancing figure on credit side of Income and Expenditure Account denotes excess of expenses over incomes.
(iv) Scholarships granted to students out of funds provided by government will be debited to Income and Expenditure Account.
(v) Receipt and Payment Account records the receipts and payments of revenue nature only.
(vi) Donations for specific purposes are always capitalized.
(vii) Opening balance sheet is prepared when the opening balance of capital fund is not given.
(viii) Surplus of Income and Expenditure Account is deducted from the capital/general fund.
(ix) Receipt and Payment Account is equivalent to profit and loss account.
(x) Receipt and Payment Account does not differentiate between capital and revenue receipts.

## 1.6 Some Peculiar Items

Final accounts of the Not-for-Profit organisations are prepared on the similar pattern as that of a business orgnisation. However, a few items of income and expenses of such orgnisations are somewhat different in nature and need special attention in their treatment in final accounts. They are peculiar to these orgnisations. Some of the common peculiar items are explained as under:

*Subscriptions:* Subscription is a membership fee paid by the member on annual basis. This is the main source of income of such orgnisations. Subscription paid by the members is shown as receipt in the Receipt and Payment Account and as income in the Income and Expenditure Account. It may be noted that Receipt and Payment Account shows the total amount of subscription actually received during the year while the amount shown in Income and Expenditure Account is confined to the figure related to the current period only irrespective of the fact whether it has been received or not. For example, a club received Rs. 20,000 as subscriptions during the year 2016-17 of which Rs.3,000 relate to year 2015-16 and Rs.2,000 to 2017-18, and at the end of the year 2016-17 Rs.6,000 are still receivable. In this case, the Receipt and Payment Account will show Rs.20,000 as receipt from subscriptions. But the Income and Expenditure Account will show Rs. 21,000 as income from subscriptions for the year 2016-17, the calculation of which is given as below:

| | Rs. |
|---|---|
| Subscriptions received in 2016-17 | 20,000 |
| *Less*: Subscriptions for the year 2015-16 | 3,000 |
| | 17,000 |
| *Less*: Subscription for the year 2017-18 | 2,000 |
| | 15,000 |
| *Add*: Subscriptions outstanding for the year 2016-17 | 6,000 |
| Income from subscriptions for the year 2016-17 | **21,000** |

The above amount of subscriptions to be shown as income can also be ascertained by preparing the subscription account as follows:

**Subscription Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d (outstanding at the beginning) | | 3,000 | | Balance b/d (received in advance during previous year) | | Nil |
| | Income and Expenditure Account (balancing figure) | | 21,000 | | Cash (subscription received) | | 20,000 |
| | Balance c/d (received in advance) | | 2,000 | | Balance c/d (outstanding at the end) | | 6,000 |
| | | | **26,000** | | | | **26,000** |

***Illustration 5***

As per Receipt and Payment Account for the year ended on March 31, 2017, the subscriptions received were Rs. 2,50,000. Additional Information given is as follows:

1. Subscriptions Outstanding on 1.4.2016 Rs. 50,000
2. Subscriptions Outstanding on 31.3.2017 Rs.35,000
3. Subscriptions Received in Advance as on 1.4.2016 Rs.25,000
4. Subscriptions Received in Advance as on 31.3.2017 Rs.30,000

Ascertain the amount of income from subscriptions for the year 2016–17 and show how relevant items of subscriptions appear in opening and closing balance sheets.

***Solution***

| *Details* | *Amount (Rs.)* |
|---|---|
| Subscriptions Received as per Receipt and Payment account | 2,50,000 |
| *Add*: Subscriptions outstanding on 31.3.2017 | 35,000 |
| *Add*: Subscriptions received in advance on 1.4.2016 | 25,000 |
| | 3,10,000 |
| *Less*: Subscriptions outstanding on 1.4.2016 | 50,000 |
| | 2,60,000 |
| *Less*: Subscriptions received in advance on 31.3.2017 | 30,000 |
| Income from subscription for the year 2016–17 | **2,30,000** |

Alternately, income received from subscriptions can be calculated by preparing a Subscriptions account as under.

**Subscription Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Balance b/d (outstanding) | | 50,000 | | Balance b/d (advance) | | 25,000 |
| | Income and Expenditure Account (balancing figure) | | 2,30,000 | | Receipts and Payments A/c | | 2,50,000 |
| | Balance c/d (advance) | | 30,000 | | Balance c/d (outstanding) | | 35,000 |
| | | | **3,10,000** | | | | **3,10,000** |

Relevant items of subscription can be shown in the opening and closing balance sheet as under:

**Balance Sheet as on March 31, 2014**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Subscriptions received in advance | 25,000 | Subscription outstanding | 50,000 |

*Relevant data only

**Balance Sheet as on March 31, 2015**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Subscriptions received in advance | 30,000 | Subscriptions outstanding | 35,000 |

*Relevant data only

### *Illustration 6*

Extracts of Receipt and Payment Account for the year ended March 31, 2017 are given below:

| *Receipt* | |
|---|---|
| *Subscriptions* | *(Rs.)* |
| 2015-16 | 2,500 |
| 2016-17 | 26,750 |
| 2017-18 | 1,000 |
| | 30,250 |

*Additional Information:*
Total number of members: 230.
Annual membership fee: Rs. 125.
Subscriptions outstandings on April 1, 2016: Rs. 2,750.
Prepare a statement showing all relevant items of subscriptions viz., income, advance, outstandings, etc.

### *Solution*

Amount of subscription due for the year 2016-17 irrespective of cash Rs. 28,750 (i.e. Rs. 125 × Rs. 230).

| *Details* | *Amount (Rs.)* |
|---|---|
| Subscriptions received as per Receipts and Payments Account | 30,250 |
| *Add:* Subscriptions outstanding on March 31, 2016 | 2,250 |
| *Add:* Subscriptions received in advance on April 1, 2016 | NIL |
| | 32,500 |
| *Less:* Subscriptions outstanding on April 1, 2016 | 2,750 |
| | 29,750 |
| *Less:* Subscriptions received in advance on March 31, 2017 | 1,000 |
| Income from Subscription for the year 2016-17. (125×230) | **28,750** |

*Note:* The amount of subscriptions outstanding as on 01-04-2014 has been ascertained as follows:

| Details | (Rs.) | (Rs.) |
|---|---|---|
| (i) Outstanding as on 01.04.2016 | 2,750 | |
| Received for 2015–16 | 2,500 | 250 |
| (ii) Due for 2016–17 (125×230) | 28,750 | |
| Received for 2016–17 | 26,750 | 2,000 |
| Outstanding as on 31-3-2017 | | **2,250** |

### *Illustration 7*

From the following extract of Receipt and Payment Account and the additional information, compute the amount of income from subscriptions and show as how they would appear in the Income and Expenditure Account for the year ending March 31, 2015 and the Balance Sheet.

**Receipt and Payment Account for the year ending March 31, 2015**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Subscriptions: | | | | |
| 2013-14 | 7,000 | | | |
| 2014-15 | 30,000 | | | |
| 2015-16 | 5,000 | **42,000** | | |

*Additional Information:* Rs.

1. Subscriptions outstanding March 31, 2014 — 8,500
2. Total Subscriptions outstanding March 31, 2015 — 18,500
3. Subscriptions received in advance as on March 31, 2014 — 4,000

### *Solution*

**Income and Expenditure Account**
**for the year ending on March 31, 2015**

| *Expenditure* | *Amount (Rs.)* | *Income* | *Amount (Rs.)* |
|---|---|---|---|
| | | Subscriptions | 30,000 |
| | | Received for 2014-15 | |
| | | *Add:* Outstanding for 2014-15 | 17,000 |
| | | *Add:* Received in advance for 2014-15 | 4,000 |
| | | | **51,000** |

*Note:* Total amount of subscriptions outstanding as on 31-3-2015 are Rs. 18,500. This, includes Rs. 1,500 (Rs. 8,500 – Rs. 7,000) for subscriptions still outstanding for 2013–14. Hence, the subscriptions outstanding for 2014–15 are Rs. 17,000 (Rs. 18,500 – Rs. 1,500).

**Balance Sheet (Relevant Data) as on March 31, 2015**

| *Liabilities* | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Subscription Received in Advance for 2014-15 | **5,000** | Subscription Outstanding:<br>2013-14<br>2014-15 | <br>1,500<br>1,7000 | **18,500** |

*Relevant data only

**Do it Yourself**

1. Subscriptions received by the health club during the year 2015 were as under:

| | *Rs.* |
|---|---|
| 2014 | 3,000 |
| 2015 | 96,000 |
| 2016 | 2,000 |
| | 1,01,000 |

| | *Rs.* |
|---|---|
| Subscriptions Outstanding as on 31.12.14 | 5,000 |
| Subscriptions Outstanding as on 31.12.15 | 12,000 |
| Subscriptions received in advance in 2014 for 2015 | 5,000 |

Calculate the amount of subscriptions to be shown on the income side of Income and Expenditure A/c.

2. During the year 2015, subscriptions received by a sports club were Rs. 80,000. These included Rs. 3,000 for the year 2014 and Rs.6,000 for the year 2016. On March 31, 2016 the amount of subscriptions due but not received was Rs.12,000. Calculate the amount of subscriptions to be shown in Income and Expenditure Account as income from subscription.

3. Subscriptions received during the year ended December 31, 2015 by Royal Club were as under:

| | *Rs.* |
|---|---|
| 2014 | 3,000 |
| 2015 | 93,000 |
| 2016 | 2,000 |
| | 98,000 |

The club has 500 members each paying @ Rs.200 as annual subscription. Subscriptions outstanding as on March 31, 2016 are Rs. 6,000. Calculate the amount of subscriptions to be shown as income in the Income and Expenditure Account for the year ended March 31, 2016 and show the relevant data in the Balance Sheet as on date.

*Donations:* It is a sort of gift in cash or property received from some person or organisation. It appears on the receipts side of the Receipts and Payments Account. Donation can be for specific purposes or for general purposes.

*(i) Specific Donations:* If donation received is to be utilised to achieve specified purpose, it is called Specific Donation. The specific purpose can be an

extension of the existing building, construction of new computer laboratory, creation of a book bank, etc. Such donation is to be capitalised and shown on the liabilities side of the Balance Sheet irrespective of the fact whether the amount is big or small. The intention is to utilise the amount for the specified purpose only.

*(ii) General Donations:* Such donations are to be utilised to promote the general purpose of the organisation. These are treated as revenue receipts as it is a regular source of income hence, it is taken to the income side of the Income and Expenditure Account of the current year.

*Legacies:* It is the amount received as per the *will* of a deceased person. It appears on the receipts side of the Receipt and Payment Account and is directly added to capital fund/general fund in the balance sheet, because it is not of recurring nature. However, legacies of a small amount may be treated as income and shown on the income side of the Income and Expenditure Account.

*Life Membership Fees:* Some members prefer to pay lump sum amount as life membership fee instead of paying periodic subscription. Such amount is treated as capital receipt and credited directly to the capital/general fund.

*Entrance Fees:* Entrance fee also known as admission fee is paid only once by the member at the time of becoming a member. In case of organisations like clubs and some charitable institutions, is limited and the amount of entrance fees is quite high. Hence, it is treated as non-recurring item and credited directly to capital/general fund. However, for some organisations like educational institutions, the entrance fees is a regular income and the amount involved may also be small. In their case, it is customary to treat this item as a revenue receipt. However, if there is specific instruction, it is advisable to treat the entire amount as capital receipt and the relevant amount should be directly added to capital/general fund.

*Sale of old asset:* Receipts from the sale of an old asset appear in the Receipts and Payments Account of the year in which it is sold. But any gain or loss on the sale of asset is taken to the Income and Expenditure Account of the year. For example, if an item furniture with a book value of Rs. 800 is sold for Rs. 700, this amount of Rs. 700 will be shown as receipt in Receipts and Payments Account and Rs. 100 on the expenditure side of the Income and Expenditure Account as a loss on sale of old asset and while showing furniture in the balance sheet Rs. 800 will be deducted from its total book value.

*Sale of Periodicals:* It is an item of recurring nature and shown as the income side of the Income and Expenditure Account.

*Sale of Sports Materials:* Sale of sports materials (*used* materials like old balls, bats, nets, etc) is the regular feature with any Sports Club. It is usually shown as an income in the Income and Expenditure Account.

*Payments of Honorarium:* It is the amount paid to the person who is not the regular employee of the institution. Payment to an artist for giving performance at the club is an example of honorarium. This payment of honorarium is shown on the expenditure side of the Income and Expenditure Account.

*Endowment Fund:* It is a fund arising from a bequest or gift, the income of which is devoted for a specific purpose. Hence, it is a capital receipt and shown on the Liabilities side of the Balance Sheet as an item of a specific purpose fund.

*Government Grant:* Schools, colleges, public hospitals, etc. depend upon government grant for their activities. The recurring grants in the form of maintenance grant is treated as revenue receipt (i.e. income of the current year) and credited to Income and Expenditure account. However, grants such as building grant are treated as capital receipt and transferred to the building fund account. It may be noted that some Not-for-Profit organisations receive cash subsidy from the government or government agencies. This subsidy is also treated as revenue income for the year in which it is received.

*Special Funds*

The Not-for-Profit Organisations office create special funds for certain purposes/ activities such as 'prize funds', 'match fund' and 'sports fund', etc. Such funds are invested in securities and the income earned on such investments is added to the respective fund, not credited to Income and Expenditure Account. Similarly, the expenses incurred on such specific purposes are also deducted from the special fund. For example, a club may maintain a special fund for sports activities. In such a situation, the interest income on sports fund investments is added to the sports fund and all expenses on sports deducted therefrom. The special funds are shown in balance sheet. However, if, after adjustment of income and expenses the balance in specific or special fund is negative, it is transferred to the debit side of the Income and Expenditure Account or adjusted as per prescribed directions. (see Illustrations 8 and 9.)

***Illustration 8***

Show how you would deal with the following items in the financial statements of a Club:

| *Details* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|
| Prize Fund | | 80,000 |
| Prize Fund Investments | 80,000 | |
| Income from Prize Fund Investments | | 8,000 |
| Prizes awarded | 6,000 | |

### Solution

**Balance Sheet as on...........**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Prize fund | 80,000 | | Prize Fund Investments | 80,000 |
| *Add:* Income from | 8,000 | | | |
| Investments | 88,000 | | | |
| *Less:* Prizes Awarded | 6,000 | 82,000 | | |

### Illustration 9

(a) Show the following information in financial statements of a ‘ Not-for-Profit’ Organisation:

| *Details* | *Amount (Rs.)* |
|---|---|
| Match Expenses | 16,000 |
| Match Fund | 8,000 |
| Donation for Match Fund | 5,000 |
| Sale of Match tickets | 7,000 |

(b) What will be the effect, if match expenses go up by Rs. 6,000 other things remaining the same?

### Solution

*(a)*

**Balance Sheet as on...........***

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Match fund | 8,000 | | | |
| *Add:* Donation (Specific) | 5,000 | | | |
| *Add:* Sale of Match | 7,000 | | | |
| Tickets | 20,000 | | | |
| *Less:* Match Expenses | 16,000 | 4,000 | | |
| | | **4,000** | | |

* *Only relevant data.*

*(b)*

If match expenses go up by Rs. 6,000, the net balance of the match fund becomes negative i.e. Debit exceeds the Credit, and the resultant debit balance of Rs. 2,000 shall be charged to the Income and Expenditure Account of that year.

**Test your Understanding – II**

How would you treat the following items in the case of a 'not-for-profit' organisation?

1. Tournament Fund Rs. 40,000. Tournament Expenses Rs. 14,000. Receipts from Tournament Rs. 16,000.
2. Table Tennis match expenses Rs. 4,000.
3. Prize Fund Rs. 22,000. Interest on Prize fund Investments Rs. 3,000. Prizes given Rs. 5,000. Prize fund Investments Rs. 18,000.
4. Receipts from Charity Show Rs. 7,000. Expenses on Charity Show Rs. 3,000.

### *Illustration 10*

Extract of a Receipt and Payment Account for the year ended on March 31, 2015:

*Payments:*

Stationery Rs. 23,000

Additional Information:

| *Details* | *April 1, 2014* | *March 31, 2015* |
|---|---|---|
| Stock of stationery | 4,000 | 3,000 |
| Creditors for stationery | 9,000 | 2,500 |

### *Solution*

| *Details* | *Amount (Rs.)* |
|---|---|
| Payment made for the purchase of stationery as per Receipts and Payments account | 23,000 |
| *Less*: Creditors in the beginning | 9,000 |
| Payment made for the year 2014-15 | 14,000 |
| *Add*: Payment not yet made (i.e. creditors at the end) | 2,500 |
| Stationery *Purchased* for the year 2014-15 | 16,500 |
| *Add*: Stock in the beginning | 4,000 |
| Stationery Available for consumption during 2014-15 | 20,500 |
| *Less*: Stock at the end | 3,000 |
| Stationery Consumed during 2014-15 to be taken to the Expenditure side of the Income and Expenditure account | **17,500** |

*Stationery:* Normally expenses incurred on stationary, a consumable items are charged to Income and Expenditure Account. But in case stock of stationery (opening and/or closing) is given, the approach would be make necessary adjustments in purchases of stationery and work out cost of stationery consumed and show that amount in Income and Expenditure Account and its stock in the balance sheet. For example, the Receipt and Payment Account shows a payment for stationery amounting to Rs. 40,000 and there is an opening and closing stationery amounting to Rs. 12,000 and Rs. 15,000. The amount of expense on stationery will be worked out as follows:

| | |
|---|---|
| Stationery | |
| Purchases | 40,000 |
| *Add:* Opening stock | 12,000 |
| | 52,000 |
| *Less:* Closing stock | 15,000 |
| | 37,000 |

In case stationery is also purchased on credit, the amount of its consumption will be worked out as given in Illustration 12.

**Do it Yourself**

1. Find out the cost of medicines consumed during 2014-15 from the following information:

| *Details* | *Amount (Rs.)* |
|---|---|
| Payment for purchase of medicines | 3,70,000 |
| Creditors for medicines purchased: | |
| On 1.4.2014 | 25,000 |
| On 31.3.2015 | 17,000 |
| Stock of Medicines: | |
| On 1.4.2014 | 62,000 |
| On 31.3.2015 | 54,000 |
| Advance to suppliers of medicines: | |
| On 1.4.2014 | 11,500 |
| On 31.3.2015 | 18,200 |

2. What amount of sports material will be posted to Income and Expenditure Account for the year ended March 31, 2016 as expenditure? :

| | *Amount (Rs.)* |
|---|---|
| Stock of sports materials as on April 1, 2014 | 7,500 |
| Creditors for sports material as on April 1, 2014 | 2,000 |
| Stock of sports material as on March 31, 2016 | 6,200 |
| Amount paid for sports material during the year 2015-16 | 17,000 |
| Advance paid for sports material as on March 31, 2016 | 3,500 |
| Creditors for sports material as on March 31, 2016 | 1,200 |

### *Illustration 11*

Following is the Receipt and Payment Account of an Entertainment Club for the period April 1, 2016 to March 31, 2017.

**Receipt and Payment Account for the year ending March 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Balance b/d | | | Salaries | | 24,000 |
| Cash | 27,500 | | Electric bill | | 21,000 |
| Bank | 60,000 | 87,500 | Food stuff for restaurant | | 60,000 |
| Member's subscriptions: | | | Telephone bill | | 35,000 |
| 2015-2016 | 12,500 | | Subscription for periodicals | | 14,500 |
| 2016-2017 | 1,00,000 | | Printing and stationery | | 13,000 |
| 2017-2018 | 10,000 | 1,22,500 | Sports expenses | | 50,000 |
| Sale of furniture | | | Secretary's honorarium | | 30,000 |
| (book value: Rs. 8,000) | | 10,000 | 8% Investments (31.3.2017) | | 1,00,000 |
| Sale of food stuffs | | 1,00,000 | Balance c/d: | | |
| Sale of old periodicals | | 3,200 | Cash | 21,500 | |
| and newspapers | | | Bank | 45,000 | 66,500 |
| Hire of ground used | | 48,750 | | | |
| for marriage | | | | | |
| Donation for sports fund | | 25,000 | | | |
| Locker Rent | | 17,050 | | | |
| | | **4,14,000** | | | **4,14,000** |

*Additional Information*

1. The club had 225 members, each paying an annual subscription of Rs. 500. Subscription outstanding as on 31 March 2016 Rs. 15,000.
2. Telephone bill outstanding for the year 2016-2017 is Rs. 2,000.
3. Locker Rent Rs. 3,050 outstanding for the year 2015-16 and Rs. 1,500 for 2016-17.
4. Salary outstanding for the year 2016-17 Rs. 4,000.
5. Opening Stock of Printing and stationery Rs. 2,000 and closing stock of printing and stationery is Rs. 3,000 for the year 2016-17.
6. On 1$^{st}$ April 2016 other balances were as under:

| | *Rs.* |
|---|---|
| Furniture | 1,00,000 |
| Building | 6,50,000 |
| Sports fund | 15,000 |

7. Depreciation Furniture and Building @ 12.5% and 5% respectively assuming that it is on reducing balance for the year ending March 31,2017

Prepare Income and Expenditure account and Balance Sheet as on that date.

***Solution***

**Book of Entertainment Club**
**Income and Expenditure Account**
**for the year ending on March 31, 2017**

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Salary | 24,000 | | Subscriptions | 1,00,000 | |
| *Add:* Outstanding | 4,000 | 28,000 | *Add:* Outstanding | 12,500 | 1,12,500 |
| Electric Bill | | 21,000 | Sale of old periodicals | | 3,200 |
| Telephone Bill | 35,000 | | Profit on sale of furniture | | 2,000 |
| *Add:* Outstanding | 2,000 | 37,000 | Hire of ground for marriage | | 48,750 |
| Subscription for periodicals | | 14,500 | Locker rent | 17,050 | |
| Printing and Stationery | 13,000 | | *Less:* Opening o/s | 3,050 | |
| *Add:* Opening Stock | 2,000 | | | 14,000 | |
| | 15,000 | | *Add:* Closing o/s | 1,500 | 15,500 |
| *Less:* Closing stock | 3,000 | 12,000 | | | |
| Secretary's honorarium | | 30,000 | Sale of Food Stuff | 1,00,000 | |
| Sports Expenses | 50,000 | | Cost of food Consumed | 60,000 | 40,000 |
| Less: Opening Balance of sports fund | 15,000 | | | | |
| | 35,000 | | | | |
| Less: Donation for Sports | 25,000 | 10,000 | | | |
| Depreciation On: | | | | | |
| Furniture | 11,500 | | | | |
| Building | 32,500 | 44,000 | | | |
| Surplus (Excess of Income over Expenditure) | | 25,450 | | | |
| | | **2,21,950** | | | **2,21,950** |

**Balance Sheet of Entertainment Club as on March 31, 2016**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Sports fund | 15,000 | Cash in hand | 27,500 |
| Capital/General Fund (Balancing figure) | 8,42,550 | Cash at bank | 60,000 |
| | | Outstanding subscription | 15,000 |
| | | Outstanding locker Rent | 3,050 |
| | | Printing & Stationery | 2,000 |
| | | Furniture | 1,00,000 |
| | | Buildings | 6,50,000 |
| | **8,57,550** | | **8,57,550** |

**Balance Sheet of Entertainment Club as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Subscriptions received in advanced | | 10,000 | Cash in hand | | 21,500 |
| Outstanding Telephone Bill | | 2,000 | Cash at bank | | 45,000 |
| Salary Outstanding | | 4,000 | Outstanding subscriptions (2015 Rs 2500 and 2016 Rs 12500) | | 15,000 |
| *Capital/General Fund* | 8,42,550 | | Outstanding locker Rent | | 1,500 |
| *Add:* Surplus | 25,450 | 8,68,000 | Printing and Stationery | | 3,000 |
| | | | Furniture | 1,00,000 | |
| | | | Less: Sales | 8,000 | |
| | | | | 92,000 | |
| | | | Less: Depreciation | 11,500 | 80,500 |
| | | | Building | 6,50,000 | |
| | | | Less: Depreciation | 32,500 | 6,17,500 |
| | | | Investment | | 1,00,000 |
| | | **8,84,000** | | | **8,84,000** |

### *Illustration 12*

Prepare Income and Expenditure Account and Balance Sheet for the year ended March 31, 2015 from the following information.

**Receipt and Payment Account for the year ending March 31, 2015**

| *Receipts* | | *Amount (Rs.)* | *Payments* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Balance b/d | | 41,000 | Salaries and Wages: | | |
| Subscriptions: | | | 2013-14 | 4,800 | |
| 2013-14 | 7,200 | | 2014-15 | 83,200 | 88,000 |
| 2014-15 | 3,37,600 | | Sundry expenses | | 37,000 |
| 2015-16 | 12,000 | 3,56,800 | Freehold land | | 60,000 |
| Entrance fees | | 16,000 | Stationery | | 16,000 |
| Locker rent | | 58,000 | Rates | | 24,000 |
| Revenue from refreshment | | 48,000 | Refreshment expenses | | 37,500 |
| Income from investments | | 56,000 | Telephone charges | | 4,000 |
| | | | Investments | | 2,50,000 |
| | | | Audit fee | | 6,000 |
| | | | Balance c/d | | 53,300 |
| | | **5,75,800** | | | **5,75,800** |

The following additional information is provided to you:

1. There are 1800 members each paying an annual subscription of Rs. 200, Rs. 8,000 were in arrears for 2013-14 as on April 1, 2014.
2. On March 31, 2015 the rates were prepaid to June 2015; the charge paid every year being Rs. 24,000.
3. There was an outstanding telephone bill for Rs. 1,400 on March 31, 2015.
4. Outstanding sundry expenses as on March 31, 2014 totaled Rs. 2,800.
5. Stock of stationery as on March 31, 2014 was Rs. 2000; on March 31, 2015, it was Rs. 3,600.
6. On March 31, 2014 Building stood at Rs. 4,00,000 and it was subject to depreciation @ 2.5% p. a.
7. Investment on March 31, 2014 stood at Rs. 8,00,000.
8. On March 31, 2015, income accrued on investments purchased during the year amounted to Rs. 1,500.

**Solution**

**Income and Expenditure Account**
**for the year ending on March 31, 2015**

*Dr.* *Cr.*

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Salaries and Wages | | 83,200 | Subscriptions | | 3,60,000 |
| Sundry Expenses | 37,000 | | Entrance fees | | 16,000 |
| *Less*: Outstanding on | | | Locker rent | | 58,000 |
| 31.3.2014 | 2,800 | 34,200 | Income from refreshment: | | |
| *Stationery :* (consumed) | | | Revenue from | 48,000 | |
| Opening stock | 2,000 | | refreshment | | |
| *Add:* Purchases | 16,000 | | *Less:* Refreshment | 37,500 | 10,500 |
| *Less:* Closing stock | 3,600 | 14,400 | expenses | | |
| Rates | 24,000 | | Income from | 56,000 | |
| *Less:* Paid for 2015-16 | 6,000 | | investments | | |
| *Add:* Prepaid in 2014-15 | 6,000 | 24,000 | *Add:* Accrued income | 1,500 | 57,500 |
| Telephone charges | 4,000 | | on current year | | |
| *Add:* Outstanding | 1,400 | 5,400 | investment | | |
| audit fee | | 6,000 | | | |
| Surplus Depreciation on building | | 10,000 | | | |
| (excess of Income over | | | | | |
| expenditure) | | 3,24,800 | | | |
| | | **5,02,000** | | | **5,02,000** |

**Balance Sheet as on March 31, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Outstanding Telephone Expenses | | 1,400 | Cash and Bank Balance | | 53,300 |
| | | | Subscription in Arrears | | 23,200 |
| Subscription received in Advance | | 12,000 | Stock of Stationery | | 3,600 |
| | | | Rates Prepaid | | 6,000 |
| General Fund | 12,49,400 | | Accrued Interest on investment: | | 1,500 |
| *Add:* Surplus | 3,24,800 | 15,74,200 | Investments | 8,00,000 | |
| | | | Additions | 2,50,000 | 10,50,000 |
| | | | Building | 4,00,000 | |
| | | | *Less:* Depreciation | 10,000 | 3,90,000 |
| | | | Land | | 60,000 |
| | | **15,87,600** | | | **15,87,600** |

**Balance Sheet as on March 31, 2014**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Outstanding Sundry Expenses | 2,800 | Cash and Bank balance | 41,000 |
| Outstanding Salary and Wages | 4,800 | Subscription in arrears | 8,000 |
| General Fund | 12,49,400 | Stock of stationery | 2,000 |
| (Balancing figure) | | Rates prepaid | 6,000 |
| | | Investments | 8,00,000 |
| | | Building | 4,00,000 |
| | **12,57,000** | | **12,57,000** |

*Working Note :*

**Subscription Account**

***Dr.*** ***Cr.***

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Opening Balance or Balance b/d (Arrears for 2013-14) | | 8,000 | | Receipt and Payment | | 3,56,800 |
| | Income and Expenditure (1800×200) | | 3,60,000 | | Balance c/d | | 23,200 |
| | Balance c/d (Advance for 2015-16) | | 12,000 | | | | |
| | | | **3,80,000** | | | | **3,80,000** |

***Illustration 13***

Following is the Receipt and Payment Account of Friendship Club in respect of the Year on 31.3.2016.

**Receipt and Payment Account for the year ending March 31, 2016.**

| *Receipts* | | *Amount (Rs.)* | *Payment* | *Amount (Rs.)* |
|---|---|---|---|---|
| Opening cash in hand | | 10,000 | Salaries | 20,000 |
| Subscription: | | | Stationery | 4,500 |
| 2014-15 | 15,000 | | Rates and Taxes | 1,500 |
| 2015-16 | 20,000 | | Telephone charges | 7,500 |
| 2016-17 | 5,000 | 40,000 | 8% govt. securities at par | 25,000 |
| Profit from sports | | 17,800 | Sundry expenses | 500 |
| Interest on 8% govt. securities | | 5,000 | Courier service charges | 300 |
| | | | Closing cash in hand | 13,500 |
| | | **72,800** | | **72,800** |

*Additional Information :*

1. There are 500 members, each paying an annual subscription of Rs. 50, Rs. 17,500 being in arrears for 2014-15 at the beginning of 2015-16. During 2014-15, subscriptions were paid in advance by 40 members for 2015-16.
2. Stock of stationery on March 31, 2015, was Rs. 1,500 and on March 31, 2016, Rs. 2,000.
3. On March 31, 2016, the rates and taxes were prepaid to the following January 31, the annual charge being Rs. 1,500.
4. A quarter's charge for telephone is outstanding, the amount accrued being Rs.1,500. There is no change in quarterly charge.
5. Sundry expenses accruing at 31.3.2015 were Rs. 250 and at March 31, 2016 Rs. 300.
6. On March 31, 2015 Building stood in the books at Rs. 2,00,000 and it is required to write off depreciation @ 10% p.a.
7. Value of 8% Government Securities on March 31, 2015 was Rs. 75,000 which were purchased at that date at Par. Additional Government Securities worth Rs. 25,000 are purchased on March 31, 2016.

You are required to prepare:

(a) An Income and Expenditure Account for the year ended on 31.3.2016

(b) A Balance Sheet on that date.

## Solution

**Books of Friendship Club**
**Balance Sheet as on March 31, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Outstanding Expenses: | | | Building | 2,00,000 |
| Telephone charges | 3,000 | | Investment in 8% Govt. | 75,000 |
| Sundry Expenses | 250 | 3,250 | Securities | |
| Subscription received in | | 2,000 | Stock of stationery | 1,500 |
| Advance | | | Prepaid Rates and Taxes | 1,250 |
| General Fund | | 3,00,000 | Subscription outstanding | 17,500 |
| (balancing figure) | | | Cash in hand | 10,000 |
| | | **3,05,250** | | **3,05,250** |

**Income and Expenditure Account**
**for the year ending on March 31, 2015**

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Salaries | | 20,000 | Profit on Sports | | 17,800 |
| Stationery (paid) | 4,500 | | Interest on 8% Govt. | 5,000 | |
| *Add:* Opening stock | 1,500 | | Securities Received | | |
| | 6,000 | | *Add:* Receivable | 1,000 | 6,000 |
| *Less:* Closing stock | 2,000 | | Total Subscription | 40,000 | |
| Stationery consumed | | 4,000 | Received during | | |
| Rates and Taxes | 1,500 | | the current year | | |

| | | | | | |
|---|---|---|---|---|---|
| *Less:* Closing Prepaid | 1,250 | | *Add:* Opening Subscription in advance | 2,000 | |
| | 250 | | | | |
| *Add: Opening Prepaid* | 1,250 | 1,500 | *Add:* Outstanding at the end of the Current Year (2,500+3,000)= | 5,500 | |
| Telephone charges paid | 7,500 | | | 47,500 | |
| *Add:* Outstanding (Current Year) | 1,500 | | *Less:* Subscription received in Advance(Closing) | 5,000 | |
| | 9,000 | | | 42,500 | |
| *Less:* Outstanding (Previous year) | 3,000 | 6,000 | *Less:* Outstanding at the start of the Current Year | 17,500 | 25,000* |
| Sundry expenses paid | 500 | | | | |
| *Add:* Outstanding (Current Year) | 300 | | | | |
| | 800 | | | | |
| *Less:* Outstanding (Previous year) | 250 | 550 | | | |
| Depreciation on building | | 20,000 | Deficit: (Excess of Expenditure over to Income) | | 3,550 |
| Courier charges | | 300 | | | |
| | | **52,350** | | | **52,350** |

* Verification: 500 × 50 = 25000.

**Balance Sheet of Friendship Club as on March 31, 2016**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Outstanding Expenses: | | | Building : | 2,00000 | |
| Telephone charges | 1,500 | | *Less:* depreciation | 20,000 | 1,80,000 |
| Sundry Expenses | 300 | 1,800 | Investment in 8% Govt. Securities: | 75,000 | |
| Subscription received in Advance | | 5,000 | *Add:* Purchases | 25,000 | 1,00,000 |
| General Fund | 3,00,000 | | Stock of stationery | | 2,000 |
| *Less:* Deficit | 3,550 | 2,96,450 | Interest on 8% Govt. securities Receivable | | 1,000 |
| | | | Prepaid Rates and Taxes | | 1,250 |
| | | | Subscription outstanding (Rs.17,500-Rs. 5,000) +Rs. 3,000= Rs.5,500 | | 5,500 |
| | | | Cash in hand | | 13,500 |
| | | **3,03,250** | | | **3,03,250** |

## 1.7 Income and Expenditure Account based on Trial Balance

In case of not-for-profit organisations, normally the Income and Expenditure Account and Balance Sheet is prepared based on the Receipts and Payments Account and the additional information given. But, sometimes, the trial balance along with some additional information is given for this purpose. See Illustration 14.

### *Illustration 14*

From the trial balance and other information given below for a school, prepare Income and Expenditure Account for the year ended on 31.3.2017 and a Balance Sheet as on that date:

| *Debit Balance* | *Amount (Rs.)* | *Credit Balance* | *Amount (Rs.)* |
|---|---|---|---|
| Building | 6,25,000 | Admission fees | 12,500 |
| Furniture | 1,00,000 | Tuition fees received | 5,00,000 |
| Library books | 1,50,000 | Creditors for supplies | 15,000 |
| Investment @12% | 5,00,000 | Rent for the school hall | 10,000 |
| Salaries | 5,00,000 | Miscellaneous receipts | 30,000 |
| Stationery | 40,000 | Government grant | 3,50,000 |
| General expenses | 18,000 | General fund | 10,00,000 |
| Sports expenses | 15,000 | Donation for library books | 62,500 |
| Cash at bank | 50,000 | Sale of old furniture | 20,000 |
| Cash in hand | 2,000 | | |
| | **20,00,000** | | **20,00,000** |

*Additional Information:*

(i) Tution fee yet to be received for the year are Rs. 25,000.
(ii) Salaries yet to be paid amount to Rs.30,000.
(iii) Furniture costing Rs. 40000 was purchased on October 1, 2016.
(iv) The book value of the furniture sold was Rs. 50,000 on April 1, 2016
(v) Depreciation is to be charged @ 10% p.a. on furniture, 15% p.a. on Library books, and 5% p.a. on building.

### *Solution*

**Income and Expenditure Account**
**for the year ending on March 31, 2017**

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Loss on sale of old furniture (50,000 –20,000) | | 30,000 | Admission fees | | 12,500 |
| Salaries | 5,00,000 | | Tuition fees | 5,00,000 | |
| *Add:* outstanding | 30,000 | 5,30,000 | *Add:* Outstanding | 25,000 | 5,25,000 |
| Stationery | | 40,000 | Rent for the school hall | | 10,000 |
| General expenses | | 18,000 | Miscellaneous receipts | | 30,000 |
| Depreciation: | | | Government grant | | 3,50,000 |
| Furniture | 3,000 | | Interest accrued on investments | | 60,000 |
| Building | 31,250 | | | | |
| Library books | 22,500 | 56,750 | | | |
| Sports expenses | | 15,000 | | | |
| Surplus (excess of income over expenditure) | | 2,97,750 | | | |
| | | **9,87,500** | | | **9,87,500** |

*Working Notes:*

1. As admission fee is a regular income of a school, so it has been taken as a revenue income of the school.
2. Depreciation on furniture has been computed as following on the assumption that furniture was sold on April 1, 2016.

| | Amount (Rs.) |
|---|---|
| Book Value on March 31, 2017 | 1,00,000 |
| *Less:* Book Value of Sold furniture | (50,000) |
| | **50,000** |
| Depreciation on furniture of Rs. 10,000 for one year | 1,000 |
| Depreciation on furniture of Rs. 40,000 for 6 months | 2,000 |
| Total depreciation | **3,000** |

**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Creditors for Supplies | | 15,000 | Buildings | 6,25,000 | |
| Outstanding Salaries | | 30,000 | *Less:* Depreciation | 31,250 | 5,93,750 |
| Donation for Library Books | | 62,500 | Furniture | 1,00,000 | |
| General fund | 10,00,000 | | *Less:* Sold | 50,000 | |
| *Add:* Surplus | 2,97,750 | 12,97,750 | | 50,000 | |
| | | | *Less:* Depreciation | 3,000 | 47,000 |
| | | | Accrued fees | | 25,000 |
| | | | Library books | 1,50,000 | |
| | | | *Less:* Depreciation | 22,500 | 1,27,500 |
| | | | Investments @ 12% | | 5,00,000 |
| | | | Interest accrued | | 60,000 |
| | | | Cash at bank | | 50,000 |
| | | | Cash in hand | | 2,000 |
| | | **14,05,250** | | | **14,05,250** |

## 1.8 Incidental Trading Activity

Sometimes, trading activities such as chemist Shop, hospital, canteen, beauty parlour etc. also take place in such organisations to provide certain facilities to members or public in general. In such a situation, trading account has to be prepared to ascertain the results of such incidental activity. The profit from such commercial (trading) activities is applied to fulfill the main objectives for which the organisation was set up, and so it is transferred to the Income and Expenditure Account. It is pertinent to note the following procedure:

1. Prepare trading account to determine profit (or Loss) due to incidental commercial (trading) activity. All costs and revenues directly and exclusively

related to such activity are recorded in the trading account. Balance of trading account is transferred to the Income and Expenditure Account.

2. Income and Expenditure Account records, in addition to trading Profit (or loss), all other incomes and expenses not recorded in the Trading Account. Surplus or deficit revealed by the Income and Expenditure Account is transferred to capital/general fund.

### *Illustration 15*

Following balances have been extracted from the books of Pleasant Club for the year ended on March 31, 2016:

| *Details* | *Amount (Rs.)* |
|---|---|
| Capital Fund as on March 31, 2016 | 2,05,000 |
| Furniture as on March 31, 2016 | 21,000 |
| Additions of furniture during the year | 23,500 |
| Billiard Table and other accessories as on March 31, 2016 | 22,250 |
| China glass and cutlery and Linen as on March 31, 2016 | 6,250 |
| Restaurant receipts during the year | 9,68,000 |
| Restaurant stock as on March 31, 2016 | 9,750 |
| Receipts from billiard Room during the year | 86,000 |
| Subscription received during the year | 88,750 |
| Interest on deposit received during the year | 6,000 |
| Honorarium paid to Secretary | 80,000 |
| Purchases for restaurant | 5,59,500 |
| Rent and Rates | 87,250 |
| Wages (restaurant Rs. 1,25,000) | 2,30,750 |
| Repairs and Renewals | 44,750 |
| Lighting | 44,250 |
| Fuel | 33,500 |
| Sundry expenses | 8,000 |
| Cash in hand as on March 31, 2016 | 4,375 |
| Bank balance as on March 31, 2016 | 36,875 |
| Bank deposit @10% as on March 31, 2016 | 1,00,000 |

Payment for purchases included Rs.7,500 for the year ended on March 31, 2016. Restaurant stock as on March 31, 2017 were Rs. 11,250. Amount of subscription received included Rs. 12,000 for the previous year and Rs. 3,000 for the next year. Subscription outstanding as on March 31, 2017 were Rs. 12,500.

Depreciation should be provided as per following rate Structure:

(a) Furniture @ 10 %; (b) Billiard Table and other accessories@ 12%; (c) glass and cutlery @ 20%.

Cost of boarding expenses of the staff is estimated at Rs. 68,750 of which Rs. 50,000 is to be charged to restaurant.

Prepare the Receipt and Payment Account; Income and Expenditure Account and the Balance Sheet showing the working of the Restaurant separately. Cash in hand on March 31, 2017 was Rs. 8,500.

***Solution***

**Books of Pleasant Club**
**Receipt and Payment Account**
**for the year ending on March 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Opening Balance: | | | Rent and Rates | | 87,250 |
| Cash in hand | 4,375 | | *Wages:* | | |
| Cash at bank | 36,875 | 41,250 | Restaurant | 1,25,000 | |
| Subscriptions | | 88,750 | Others | 1,05,750 | 2,30,750 |
| Interest on deposit | | 6,000 | Repairs and Renewals | | 44,750 |
| Restaurant receipts | | 9,68,000 | Furniture purchased | | 23,500 |
| Billiard receipts | | 86,000 | Honorarium of Secretary | | 80,000 |
| | | | Purchases for restaurant | | 5,59,500 |
| | | | Lighting | | 44,250 |
| | | | Fuel | | 33,500 |
| | | | Sundry expenses | | 8,000 |
| | | | Closing balance: | | |
| | | | Cash in hand | 8,500 | |
| | | | Cash at bank (balancing figure) | 70,000 | 78,500 |
| | | **11,90,000** | | | **11,90,000** |

**Trading Account**
**for the year ending on March 31, 2017**

| *Details* | | *Amount (Rs.)* | *Details* | *Amount (Rs.)* |
|---|---|---|---|---|
| Opening stock | | 9,750 | Restaurant receipts | 9,68,000 |
| Purchases | 5,59,500 | | Cost of boarding expenses of the staff | 68,750 |
| *Less:* Previous year | 7,500 | 5,52,000 | | |
| Wages | | 1,25,000 | Closing stock | 11,250 |
| Depreciation of glass cutlery | | 1,250 | | |
| Cost of boarding expenses of the staff | | 50,000 | | |
| Fuel | | 33,500 | | |
| Profit transferred to Income and Expenditure | | 2,76,500 | | |
| | | **10,48,000** | | **10,48,000** |

**Income and Expenditure Account**
**for the year ending on March 31, 2017**

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Wages | | 1,05,750 | Subscription Received | 88,750 | |
| Repairs and Renewals | | 44,750 | *Add:* Outstanding | 12,500 | |
| Honorarium of Secretary | | 80,000 | this year | 1,01,250 | |
| Lighting | | 44,250 | *Less:* Outstanding | 12,000 | |
| Rent and Rates | | 87,250 | previous year | 89,250 | |
| Cost of boarding | | | *Less:* Advance for | 3,000 | 86,250 |
| expenses of the staff | | 18,750 | Next year | | |
| Sundry expenses | | 8,000 | Interest received | 6,000 | |
| Depreciation on: | | | *Add:* Accrued | 4,000 | 10,000 |
| Furniture | 4,450 | | Billiard receipts | | 86,000 |
| Billiard table | 2,670 | 7,120 | Profit transferred | | 2,76,500 |
| Surplus: (Excess of Income | | | from trading Account | | |
| over Expenditure) | | 62,880 | | | |
| | | **4,58,750** | | | **4,58,750** |

**Balance Sheet of Pleasant Club as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Capital Fund | 2,05,000 | | Furniture: | | |
| *Add:* Surplus | 62,880 | 2,67,880 | Opening Balance | 21,000 | |
| Subscription received | | 3,000 | *Add:* Additions | 23,500 | |
| in Advance | | | | 44,500 | |
| | | | *Less:* Depreciation | 4,450 | 40,050 |
| | | | Billiard Table | 22,250 | |
| | | | *Less:* Depreciation | 2,670 | 19,580 |
| | | | Glass and cutlery | 6,250 | |
| | | | *Less:* Depreciation | 1,250 | 5,000 |
| | | | Restaurant stock | | 11,250 |
| | | | Subscription Outstanding | | 12,500 |
| | | | Interest Accrued | | 4,000 |
| | | | Bank deposit | | 1,00,000 |
| | | | Cash in hand | | 8,500 |
| | | | Cash at bank | | 70,000 |
| | | **2,70,880** | | | **2,70,880** |

### *Illustration 16*

Prepare Income and Expenditure Account of Entertainment Club for the year ending March 31, 2017 and Balance Sheet as on that date from the following information:

**Receipt and Payment Account**
**For the year ending on March 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance b/d | | 24,000 | Rent and Rates | 48,750 |
| Subscriptions | | | Furniture purchased | 40,000 |
| 2015-16 | 23,250 | | Creditors for sports materials | 61,000 |
| 2016-17 | 3,36,000 | | Purchases for sports materials | 10,000 |
| 2017-18 | 13,000 | 3,72,250 | Cost of prizes awarded | 20,750 |
| Sale of sports materials | | 26,000 | Match expenses | 35,150 |
| Entrance fees | | 40,000 | Miscellaneous expenses | 1,50,000 |
| General donation | | 20,250 | Balance c/d | 1,34,050 |
| Donation for prize fund | | 14,000 | | |
| Interest on prize fund | | | | |
| Investments | | 1,500 | | |
| Miscellaneous receipts | | 1,700 | | |
| | | **4,99,700** | | **4,99,700** |

*Additional Information:*

| *Details* | *Apr. 01, 2016* | *Mar. 31, 2017* |
|---|---|---|
| Sports materials | 20,000 | 25,000 |
| Furniture | 2,00,000 | ? |
| 5% Prize fund investments | 60,000 | ? |
| Creditors for sports materials | 7,000 | 14,750 |
| Subscription in arrears | 23,750 | ? |
| Prize fund | 60,000 | ? |
| Rent paid in advance | ---- | 3,750 |
| Outstanding rent | 3,750 | |
| Outstanding miscellaneous expenses | 11,400 | 20,100 |
| Miscellaneous expenses paid in advance | 3,750 | 4,250 |
| Book value of sports materials sold was Rs. 20000 | | |
| Depreciation on furniture is to be provided @ 10%. | | |
| Half of the entrance fee is to be capitalised. | | |
| There are 1440 members, each paying an annual subscription @ Rs. 250. | | |
| Subscription received in advance on 1.4.2016 were Rs. 7,000. | | |

***Solution***

**Books of Entertainment Club**
**Income and Expenditure Account**
**for the year ending March 31, 2017**

| *Expenditure* | | *Amount (Rs.)* | *Income* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Rent | 48,750 | | Subscriptions | 3,36,000 | |
| *Less:* Opening | 3,750 | | *Add:* Received | | |
| Outstanding | | | in advance | | |
| | 45,000 | | 01.04.2016 | 7,000 | |
| *Less:* Closing rent paid in | 3,750 | 41,250 | *Add:* Outstanding | | |
| advance *Sports Materials* | | | (2015–2016) | 17,000 | 3,60,000 |
| Opening stock | 20,000 | | (Rs.3,60,000–Rs.3,43,000) | | |
| *Add:* Payments | 61,000 | | General donations | | 20,250 |
| to creditor | | | Entrance fees | | 20,000 |
| | 81,000 | | Sports materials | | |
| *Add:* Closing creditor | 14,750 | | (Profit on sale) | | |
| | 95,750 | | (i.e. 26,000–20,000) | | 6,000 |
| *Add:* Cash purchase | 10,000 | | Miscellaneous receipts | | 1,700 |
| | 1,05,750 | | | | |
| *Less:* Opening creditor | 7,000 | | | | |
| | 98,750 | | | | |
| *Less:* Sports material Sold | 20,000 | | | | |
| | 78,750 | | | | |
| *Less:* Closing stock | 25,000 | 53,750 | | | |
| Match expenses | | 35,150 | | | |
| Depreciation on furniture | | 24,000 | | | |
| Miscellaneous expenses: | | | | | |
| Paid 1,50,000 | | | | | |
| *Less:* Outstanding (Opening) | 11,400 | | | | |
| | 1,38,600 | | | | |
| Paid in advance (Opening) | 4,250 | | | | |
| | 1,34,350 | | | | |
| *Add:* Outstanding (Closing) | 20,100 | | | | |
| | 1,54,250 | | | | |
| Paid in advance (Closing) | 3,750 | 1,58,200 | | | |
| Surplus (Excess of income over expenditure) | | 95,600 | | | |
| | | **4,07,950** | | | **4,07,950** |

**Balance Sheet of Entertainment Club as on March 31, 2016**

| *Liabilities* | | *Amount (Rs,)* | *Assets* | *Amount (Rs,)* |
|---|---|---|---|---|
| Capital Fund (Balancing figure) | | 2,42,350 | Furniture | 2,00,000 |
| Prize fund | | 60,000 | 5% Prize Fund Investments | 60,000 |
| Creditors for Sports Materials | | 7,000 | Subscription Receivable (i.e. outstanding) | 23,750 |
| Subscription Received in Advance | | 7,000 | Stock of Sports Materials | 20,000 |
| Outstanding Expenses: | | | Miscellaneous Expenses Paid in Advance | 3,750 |
| Rent | 3,750 | | Cash in hand | 24,000 |
| Miscellaneous Expenses | 11,400 | 15,150 | | |
| | | **3,31,500** | | **3,31,500** |

**Balance Sheet of Entertainment as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Capital fund | 2,42,350 | | *Furniture:* | | |
| *Add:* Surplus | 95,600 | | Opening balance | 2,00,000 | |
| Entrance fees | 20,000 | 3,57,950 | Additions | 40,000 | |
| Prize fund | 60,000 | | | 2,40,000 | |
| *Add:* Donations | 14,000 | | *Less:* Depreciation | 24,000 | 2,16,000 |
| Interest received | 1,500 | | 5% Prize fund investments | | 60,000 |
| Interest accrued* | 1,500 | | Subscription receivable (i.e. Outstanding): | | |
| | 77,000 | | | | |
| *Less:* Prizes awarded | 20,750 | 56,250 | (2015-2016) | 500 | |
| Creditors for sports materials | | 14,750 | (2016-2017) | 17,000 | 17,500 |
| Subscription received in advance | | 13,000 | Stock of sports materials | | 25,000 |
| Outstanding miscellaneous expenses | | 20,100 | Miscellaneous expenses Paid in advance | | 4,250 |
| | | | Prepaid rent | | 3,750 |
| | | | Accrued interest on Prize fund investments | | 1,500 |
| | | | Cash in hand | | 1,34,050 |
| | | **4,62,050** | | | **4,62,050** |

*Note:* * Interest on Prize Fund Investments @ 5% amounts to Rs. 3,000 whereas only Rs. 1,500 have been received; so the balance is treated as Accrued interest.

*It is preferable to prepare separate accounts of various items involving many transactions. In this case Account for Subscription, Miscellaneous Expenses, and Sports Materials may be made as a Classroom activity.*

### *Illustration 17*

Shiv-e-Narain Education Trust provides the information in regard to Receipt and Payment Account and Income and Expenditure Account for the year ended March 31st 2017:

**Receipt and Payment Account for the year ending March 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Cash in hand as on April 1, 2016 | | 3,000 | Printing and Stationery | 6,000 |
| | | | Lighting & Water | 2,600 |
| Cash at bank as on April 1, 2016 | | 15,000 | Rent | 21,000 |
| | | | Advertisement | 2,820 |
| *Subscription:* | | | Miscellaneous Expenses | 4,400 |
| 2015-16 | 12,000 | | Staff Salaries | 85,000 |
| 2016-17 | 46,000 | | Furniture purchased | 28,000 |
| 2017-18 | 15,600 | 73,600 | Honorarium | 15,000 |
| Entrance fees | | 25,200 | Books | 5,000 |
| *Tuition fees:* | | | Cash in hand as on March 31, 2017 | 9,180 |
| 2016-17 | 80,000 | | | |
| 2017-18 | 10,000 | 90,000 | Cash at bank as on March 31, 2017 | 45,000 |
| *Interest on investment:* | | | | |
| 2015-16 | 4,000 | | | |
| 2016-17 | 6,000 | 10,000 | | |
| Miscellaneous receipts | | 7,200 | | |
| | | **2,24,000** | | **2,24,000** |

On March 31, 2016 the following balances appeared:
Investments Rs.1, 60,000; Furniture Rs.40, 000; and Books Rs.20, 000.

**Income and Expenditure Account**
**for the year ending on March 31, 2017**

| *Expenditure* | *Amount (Rs.)* | *Income* | *Amount (Rs.)* |
|---|---|---|---|
| Printing and Stationery | 7,800 | Subscription | 46,000 |
| Lighting & Water | 2,600 | Interest on investment | 6,800 |
| Rent | 24,000 | Miscellaneous incomes | 7,200 |
| Staff salaries | 84,000 | Tuition fees | 90,000 |
| Advertisement | 3,200 | | |
| Honorarium | 15,000 | | |
| Misc. expenses | 4,400 | | |
| Depreciation on furniture | 4,000 | | |
| Surplus(Excess of income over expenditure) | 5,000 | | |
| | **1,50,000** | | **1,50,000** |

Prepare opening and closing balance sheet

### Solution

**Shiv-e-Narain Education Trust**
**Balance Sheet as on March 31, 2016**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Capital/General Fund (Balancing figure) | 2,54,000 | Investments | 1,60,000 |
| | | Furniture | 40,000 |
| | | Books | 20,000 |
| | | Outstanding subscription | 12,000 |
| | | Accrued Interest on Invest. | 4,000 |
| | | Cash in hand | 3,000 |
| | | Cash at bank | 15,000 |
| | **2,54,000** | | **2,54,000** |

**Balance Sheet of Shiv-e-Narain Education Trust as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Tuition fee advance | | 10,000 | Investments | | 1,60,000 |
| Rent Outstanding | | 3,000 | Furniture | 40,000 | |
| Advertisement Outstanding | | 380 | *Less:* Depreciation | 4,000 | |
| Printing & Stationery | | 1,800 | | 36,000 | |
| Outstanding | | | *Add:* Purchases | 28,000 | 64,000 |
| Advance Subscription | | 15,600 | Books | 20,000 | |
| Capital/ | | | *Add:* Purchases | 5,000 | 25,000 |
| General Fund | 2,54,000 | | Interest Accrued | | 800 |
| Add Entrance fee | 25,200 | | Outstanding tuition fee | | 10,000 |
| Add Surplus | 5,000 | 2,84,200 | Staff Salary Advance | | 1,000 |
| | | | Cash in Hand | | 9,180 |
| | | | Cash at Bank | | 45,000 |
| | | **3,14,980** | | | **3,14,980** |

*Note:*

1. Income and Expenditure Account for the current year shows interest on investment income Rs.6,800 while Receipts and Payments Account shows the receipts of Rs.6,000 the difference of Rs.800 means interest on investment has become due but not yet receivable during the year.
2. Income and Expenditure Account shows Rs.90,000 as income from Tuition fees. However, the Receipts and Payments Account shows Rs.10,000 as tuition fees received for the year 2017-18 and Rs.80,000 for 2015-16. It implies that Rs.10,000 on account of tuition fees for the year 2016-17 are still receivable (i.e. Tuition fees are outstanding).
3. Receipt and Payment Account shows a payment of Rs.85,000 on account of staff salaries, but the Income and Expenditure Account shows expenditure

of Rs.84,000 on account of staff salaries. It means the excess of Rs.1,000 shown in the Receipt and Payment Account may either belong to the pervious year or the next year. Their is no evidence that staff salaries of Rs.1,000 was outstanding at the end of the previous year 2013-14. This is why this payment of Rs.1,000 has been considered as an advance salaries to the staff.

### *Terms Introduced in the Chapter*

1. Not-for-Profit Organisation.
2. Receipts and Payments Account
3. Income and Expenditure Account
4. Entrance Fee
5. Life Membership
6. Special Receipts
7. Subscription
8. Donation
9. Incidental Trading Activity
10. Legacy

### *Summary*

1. *Difference between Profit Seeking Entities and Not-for-Profit Entities:* Profit-seeking entities undertake activities such as manufacturing trading, banking and insurance to bring financial gain to the owners. Not-for-Profit entities exist to provide services to the member or to the society at large. Such entities might sometimes carry on trading activities but the profits arising therefrom are used for further the service objectives.
2. *Appreciation of the need for separate Accounting Treatment for Not-for-Profit Organisations:* Since not-for-profit entities are guided primarily by a service motive, the decisions made by their managers are different from those made by their counterparts in profit-seeking entities. Differences in the nature of decisions implies that the financial information on which they are based, must also be different in content and presentation.
3. *Explanation of the nature of the Principal Financial Statements prepare by Not-for-Profit enterprises:* Not-for-Profit Organisations that maintain accounts based on the double-entry system of accounting, generally prepare three principal statements to fulfil their information needs. These include Receipts and Payments Account, Income and Expenditure Account, and a Balance Sheet.
   The Receipts and Payments Account is a summarised cash book which records all cash Receipts and cash Payments without distinguishing between capital and revenue items, and between items relating to the current year and those relating to previous or future years.
   The Income and Expenditure Account is an income statement which is prepared to ascertain the excess of revenue income over revenue expenditure or vice

versa, for a particular accounting year, as a result of the entity's overall activities. Although it is considered to be a substitute for the Trading and Profit and Loss Account of a profit-seeking entity, there are certain conceptual differences between the two statements. The Balance Sheet is prepared at the end of the entity's accounting year to depict the financial position on that date. It includes the Capital Fund or Accumulated Fund, special purpose funds, and current liabilities on the left hand or liabilities side, and fixed assets and current assets on the right hand or assets side.

4. *Difference between the Receipt and Payment Account and the Income and Expenditure Account:* Many differences exist between the Receipt and Payment Account and the Income and Expenditure Account which is evident from the nature and purpose of two statements. While the former records both capital and revenue receipts and payments relating to any accounting year, the latter records only revenue items relating to the current accounting year. Non-cash expenses such as depreciation on fixed assets and outstanding incomes and expenses are shown in the latter but omitted in the former. The Receipt and Payment Account has an opening balance while the Income and Expenditure Account does not. The closing balance of the former account represents cash and bank balances on the closing date while in the latter account it indicates surplus or deficit from the activities of the enterprise.
5. *Conversion of a Receipt and Payment Account into an Income and Expenditure Account:* This essentially involves five steps namely, (i) adjusting the revenue receipts on the debit side to include outstanding incomes and incomes relating to the current year received earlier and to exclude amounts received in arrears or in advance; (ii) adjusting revenue payments on the credit side; (iii) identifying and showing non-cash expenses and losses on the debit side of the Income and Expenditure Account; (iv) computing and showing profits/losses from trading and/or social activities on the credit/debit side of the Income and Expenditure Account; and (v) ascertaining the surplus or deficit as the closing balance of the Income and Expenditure Account.

## *Questions for Practice*

### Short Answer Questions

1. State the meaning of 'Not- for- Profit' Organisations.
2. State the meaning of Receipt and Payment Account.
3. State the meaning of Income and Expenditure Account.
4. What are the feature of Receipt and Payment Account?
5. What steps are taken to prepare Income and Expenditure Account from a Receipt and Payment Account?
6. What is subscription? How is it calculated?
7. What is Capital Fund? How is it calculated?

**Long Answer Questions**

1. Explain the statement: "Receipt and Payment Account is a summarised version of Cash Book".
2. "Income and Expenditure Account of a Not-for-Profit Organisation is akin to Profit and Loss Account of a business concern". Explain the statement.
3. Distinguish between Receipts and Payments Account and Income and Expenditure Account.
4. Explain the basic features of Income and Expenditure Account and of Receipt and Payment Account.
5. Show the treatment of the following items by a not-for-profit organisation:
   (i) Annual subscription
   (ii) Specific donation
   (iii) Sale of fixed assets
   (iv) Sale of old periodicals
   (v) Sale of sports materials
   (vi) Life membership fee
6. Show the treatment of items of Income and Expenditure Account when there is a specific fund for those items.
7. What is Receipt and Payment Account? How is it different from Income and Expenditure Account?

## *Numerical Questions*

1. From the following particulars taken from the Cash Book of a health club, prepare a Receipts and Payments Account.

| | *Rs.* |
|---|---|
| Opening balance: | |
| Cash in Hand | 5,000 |
| Cash at Bank | 25,000 |
| Subscriptions | 1,65,000 |
| Donations | 35,000 |
| Investment Purchased | 80,000 |
| Rent Paid | 20,000 |
| General Expenses | 21,500 |
| Postage and stationery | 2,000 |
| Courier charges | 1,000 |
| Sundry Expenses | 2,500 |
| Closing Cash in Hand | 12,000 |

(**Ans**: Cash at Bank (balancing figure) Rs. 91,000)

2. The Receipt and Payment Account of Harimohan charitable institution is given:

**Receipt and Payment Account for the year ending March 31, 2015**

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d | | Furniture | 3,000 |
| Cash at Bank | 22,000 | Investments | 55,000 |
| Cash in Hand | 8,800 | Advance for building | 20,000 |
| Donations | 32,000 | Charities | 60,000 |
| Subscriptions | 50,200 | Salaries | 10,400 |
| Endowment fund | 60,000 | Rent and Taxes | 4,000 |
| Legacies | 24,000 | Printing | 1,000 |
| Interest on Investment | 3,800 | Postage | 300 |
| Interest on Deposits | 800 | Advertisements | 1,100 |
| Sale of old newspapers | 500 | Insurance | 4,800 |
| | | Balance c/d: | |
| | | Cash at bank | 32,000 |
| | | Cash in hand | 10,500 |
| | **2,02,100** | | **2,02,100** |

Prepare the Income and Expenditure Account for the Year ended on March 31, 2015 after considering the following:

(i) It was decided to treat Fifty per cent of the amount received on account of Legacies and Donations as income.

(ii) Liabilities to be provided for are:
Rent Rs. 800; Salaries Rs. 1,200; advertisement Rs. 200.

(iii) Rs. 2,000 due for interest on investment was not actually received.

**(Ans** : Excess of income over Expenditure Rs. 1,500.)

3. From the following particulars , prepare Income and Expenditure account:

| *Details* | *Amount (Rs.)* |
|---|---|
| Fees collected, including Rs.80,000 on account of the previous year | 5,20,000 |
| Fees for the year outstanding | 30,000 |
| Salary paid , including Rs. 5,000 on account of the previous year | 68,000 |
| Salary outstanding at the end of the year | 3,000 |
| Entertainment expenses | 8,000 |
| Tournament expenses | 25,000 |
| Meeting Expenses | 18,000 |
| Traveling Expenses | 7,000 |
| Purchase of Books and Periodicals, including Rs. 31,000 for purchase of Books | 40,000 |
| Rent | 15,000 |
| Postage, telegrams and telephones | 6,000 |
| Printing and Stationery | 18,000 |
| Donations received | 25,000 |

**(Ans :** Excess of income over expenditure Rs. 3,23,000**)**

4. Following is the information given in respect of certain items of a Sports Club. Show these items in the Income and Expenditure Account and the Balance Sheet of the Club:

| | *Rs.* |
|---|---|
| Sports Fund as on 1.4.2015 | 35,000 |
| Sports Fund Investments | 35,000 |
| Interest on Sports Fund | 4,000 |
| Donations for Sports Fund | 15,000 |
| Sports Prizes awarded | 10,000 |
| Expenses on Sports Events | 4,000 |
| General Fund | 80,000 |
| General Fund Investments | 80,000 |
| Interest on General Fund Investments | 8,000 |

**(Ans :** Balance of Sports Fund Rs. 40,000.**)**

5. How will you deal with the following items while preparing for the Bombay Women Cricket Club its income and expenditure account for the year ending 31.3.2017 and its Balance Sheet as on 31.3.2017:

| | *Rs.* |
|---|---|
| (a) Donation received during the year for the construction of a permanent Pavilion | 12,25,000 |
| Expenditure incurred up to 31.3.2017 on its construction | 10,80,000 |
| The total estimated expenditure on construction of Pavilion being | 25,00,000 |
| (b) Tournament Fund: | |
| Balance as on 1.4.2016 | 10,700 |
| Subscriptions for tournament received during the year | 65,800 |
| Expenditure incurred during the year on conducting tournaments | 72,400 |
| (c) Life Membership fee received during the year | 28,000 |

Give reasons for your answers.

**(Ans :** (a) Balance of Pavilion Fund Rs. 1,45,000; (b) Balance of Tournment Fund Rs. 4,100; (c) Life Membership fee to the Capitalised).

6. From the following receipts and payments and information given below, Prepare Income and Expenditure Account and opening Balance Sheet of Adult Literacy Orgnisation as on December 31, 2017.

**Receipt and Payment Account for the year ending as on December 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance b/d | | | General Expenses | 3,200 |
| Cash in hand | | 4,000 | Newspaper | 1,850 |
| Cash at Bank | | 15,550 | Electricity | 3,000 |
| Subscriptions | | | Fixed deposit with bank | 18,000 |
| 2016 | 1,200 | | (on 31.06.2017) @ 10% p.a. | |
| 2017 | 26,500 | | Books | 7,000 |
| 2018 | 500 | 28,200 | Salary | 3,600 |
| Sale of old newspapers | | 1,250 | Rent | 6,500 |
| Govt. grant | | 12,000 | Postage charges | 300 |
| Sale of old furniture | | | Furniture (purchased) | 10,500 |
| (book value Rs.5000) | | 3,700 | Balance c/d | |
| Interest received on FD | | 450 | Cash in hand | 3,000 |
| | | | Cash at bank | 8,200 |
| | | **65,150** | | **65,150** |

*Information:*

(i) Subscription outstanding as on 31.12.2016 Rs.2,000 and on December 31, 2017 Rs.1,500.

(ii) On December 31, 2017 Salary outstanding Rs.600, and one month Rent paid in advance.

(iii) On Jan. 01, 2016 orgnisation owned Furniture Rs.12,000, Books Rs.5,000.

(**Ans :** Surplus Rs. 22,300, Opening Capital Fund Rs.38,550, Total Balance Sheet Rs. 61,950).

7. The following is the account of cash transactions of the Nari Kalayan Samittee for the year ended December 31, 2017:

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Balance from last year | 2,270 | Rent | 6,600 |
| Subscriptions | 32,500 | Electric charges | 3,200 |
| Life membership fee | 3,250 | Lecturer's fee | 730 |
| Donation | 2,500 | Office expenses | 1,480 |
| Profit from entertainment | 7,250 | Printing and Stationery | 1,050 |
| Sale of old Books | 750 | Legal fee | 1,870 |
| (books value Rs.1,000) | | Books | 6,500 |
| Interest | 350 | Furniture purchased | 8,600 |
| | | Expenses on nukar drama | 1,300 |
| | | Cash in hand | 8,040 |
| | | Cash at bank | 9,500 |
| | **48,870** | | **48,870** |

You are required to prepare an Income and Expenditure Account after the following adjustments:

(a) Subscription still to be received are Rs.750 , but subscription include Rs.500 for the year 2018.

(b) In the beginning of the year the Sangh owned building Rs.20,000 and furniture Rs.3,000 and Books Rs.2,000.

(c) Provide depreciation on furniture @5% (including purchase ), books @ 10% and building @ 5%.

(**Ans :** Surplus Rs. 24,040)

8. Following is the Receipt and Payment Account of Indian Sports Club, prepared Income and Expenditure Account, Balance Sheet as on December 31, 2015:

**Receipt and Payment Account for the year ending December 31, 2017**

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d | 7,890 | Salary | 11,000 |
| Subscriptions | 52,000 | Electric charges | 5,500 |
| Life membership fee | 2,200 | Billiard Table | 17,500 |
| Entrance fee | 3,200 | Office expenses | 4,100 |
| Tournament fund | 26,000 | Printing & Stationery | 2,300 |
| Locker Rent | 1,250 | Tournament expenses | 18,500 |
| Sale of old sports equipment | | Repair of ground | 2,000 |
| (Costing Rs.2,200) | 2,500 | Furniture purchased | 7,700 |
| Sale of old newspaper | 750 | Sports equipment | 12,000 |
| Legacy | 37,500 | Cash in hand | 12,690 |
| | | Cash at bank | 10,000 |
| | | Fixed deposit | |
| | | (on 1.10.2017 for 10% p.a) | 30,000 |
| | **1,33,290** | | **1,33,290** |

*Other Information:*

Subscription outstanding was on December 31, 2016 Rs.1,200 and Rs.3,200 on December 31, 2017. Locker rent outstanding on December 31, 2017 Rs.250. Salary outstanding on December 31, 2017 Rs.1,000.

On January 1, 2017, club has Building Rs.36,000, furniture Rs.12,000, Sports equipments Rs.17,500. Depreciation charged on these items @ 10% (including Purchase).

(**Ans :** Surplus Rs.26,300, Opening Capital fund Rs.74,590, Total of Closing Balance Sheet Rs.1,49,090)

9. From the following Receipt and Payment Account of Jan Kalyan Club, prepare Income and Expenditure Account and Balance Sheet for the year ending March 31, 2017.

**Receipt and Payment Account**
**for the year ending March 31, 2017**

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Cash in hand as on 1.4.16 | 6,800 | Salaries | 24,000 |
| Subscription | 60,200 | Traveling Expenses | 6,000 |
| Donation | 3,000 | Stationery | 2,300 |
| Sale of furniture | 4,000 | Rent | 16,000 |
| (Book value Rs.6000) | | Repair | 700 |
| Entrance fee | 800 | Books purchased | 6,000 |
| Life membership fee | 7,000 | Building purchased | 30,000 |
| Interest on investment | 5,000 | Cash in hand as 31.03.2017 | 1,800 |
| (@ 5% for full year) | | | |
| | **86,800** | | **86,800** |

*Additional Information:*

| | *As on 01.04.2016* | *As on 31.03.2017* |
|---|---|---|
| (i) Subscription received in advance | 1,000 | 3,200 |
| (ii) Outstanding subscription | 2,000 | 3,700 |
| (iii) Stock of stationery | 1,200 | 800 |
| (iv) Books | 13,500 | 16,500 |
| (v) Furniture | 16,000 | 8,000 |
| (vi) Outstanding rent | 1,000 | 2,000 |

(**Ans :** Surplus Rs.11,100 ,Opening Capital fund Rs.1,37,500, Total of Closing Balance Sheet Rs.1,60,800]

10. Receipt and Payment Account of Shankar Sports club is given below, for the year ended March 31, 2017

**Receipt and Payment Account**
**for the year ending March 31, 2017**

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Opening Cash in hand | 2,600 | Rent | 18,000 |
| Entrance fees | 3,200 | Wages | 7,000 |
| Donation for building | 23,000 | Billiard table | 14,000 |
| Locker rent | 1,200 | Furniture | 10,000 |
| Life membership fee | 7,000 | Interest | 2,000 |
| Profit from entertainment | 3,000 | Postage | 1,000 |
| Subscription | 40,000 | Salary | 24,000 |
| | | Cash in hand | 4,000 |
| | **80,000** | | **80,000** |

Prepare Income and Expenditure Account and Balance Sheet with help of following Information:
Subscription outstanding on March 31, 2016 is Rs.1, 200 and Rs.2, 300 on March 31, 2017, opening stock of postage stamps is Rs.300 and closing stock is Rs. 200, Rent Rs.1, 500 related to 2015 and Rs.1, 500 is still unpaid.
On April 1, 2016 the club owned furniture Rs.15, 000, Furniture valued at Rs. 22,500
On March 31, 2017, the club took a loan of Rs.20,000 (@ 10% p.a) in 2017.

(**Ans :** Deficit Rs.6,100, Opening Capital fund Deficit Rs.2,400, Total of Closing Balance Sheet Rs. 44,500)

11. Prepare Income and Expenditure Account and Balance Sheet for the year ended March 31, 2016 from the following Receipt and Payment Account and Balance Sheet of culture club:

**Receipt and Payment Account**
**for the year ending March 31, 2016**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Opening cash balance | | 12,000 | Furniture | 4,000 |
| Subscription | | | Telephone expenses | 800 |
| 2014-15 | 2,000 | | Salary | |
| 2015-16 | 22,000 | 24,000 | 2014-15 | 1,000 |
| Entrance fees | | 2,800 | 2015-16 | 4,000 |
| Locker rent | | 1,000 | Newspapers | 700 |
| Life membership fee | | 1,200 | Sundry expenses | 1,000 |
| Government grant | | 11,000 | Defence bonds | 18,000 |
| | | | Land | 20,000 |
| | | | Closing cash balance | 2,500 |
| | | **52,000** | | **52,000** |

**Balance Sheet for the year ending March 31, 2016**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Advance locker rent | 200 | Cash in hand | 12,000 |
| Subscription received in Advance | 1,000 | Outstanding subscription | 3,000 |
| | | Building | 35,000 |
| Outstanding salary | 2,000 | | |
| Loan | 10,000 | | |
| Capital fund | 36,800 | | |
| | **50,000** | | **50,000** |

(**Ans :** Surplus Rs.31500, Total of Closing Balance Sheet Rs.80500)

12. From the following Receipt and Payment Account prepare final accounts of a Unity Club for the year ended March 31, 2017

**Receipt and Payment Accounts for the year ending March 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance b/d | | 15,000 | Furniture | 18,000 |
| Sale of Old furniture | | | Library books | 10,000 |
| (costing Rs. 6,000) | | 4,000 | Salaries | 72,000 |
| Subscriptions: | | | General expenses | 18,000 |
| 2015-16 | 18,000 | | Electric charges | 12,000 |
| 2016-17 | 60,000 | | Newspapers | 33,800 |
| 2017-18 | 12,000 | 90,000 | Postage | 3,000 |
| Sale of old newspapers | | 10,800 | Stationery | 40,000 |
| Profit from entertainment | | 44,000 | Audit fee | 8,000 |
| Rent | | 84,000 | Balance c/d | 33,000 |
| | | **2,47,800** | | **2,47,800** |

**Balance Sheet as on March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Outstanding Salary | 6,000 | Cash | 15,000 |
| Capital Fund | 6,94,000 | Outstanding subscription | 18,000 |
| | | Library Books | 30,000 |
| | | Furniture | 37,000 |
| | | Land and Building | 6,00,000 |
| | **7,00,000** | | **7,00,000** |

*Additional Information:*

1. The Club had 500 members each paying an annual subscription of Rs. 150.
2. On 31.3.2016 salaries outstanding amounted to Rs. 1,200 and salaries paid included Rs. 6,000 for the year 2015-16.
3. Provide 5% depreciation on Land and Building.

(**Ans :** Deficit Rs. 200 Total of Closing Balance Sheet Rs.7,07,000)

13. Following is the information in respect of certain items of a Sports Club. You are required to show them in the Income and Expenditure Account and the Balance Sheet.

| *Details* | *Amount (Rs.)* |
|---|---|
| Sports Fund as on April 1, 2016 | 80,000 |
| Sports Fund Investments | 80,000 |
| Interest on Sports Fund Investments | 8,000 |
| Donations for Sports Fund | 30,000 |
| Sports Prizes awarded | 16,000 |
| Expenses on Sports Events | 7,000 |
| General Fund | 2,00,000 |
| General Fund Investments | 2,00,000 |
| Interest on General Fund Investments | 20,000 |

14. Receipt and Payment Account of Maitrey Sports Club showed that Rs. 68,500 were received by way of subscriptions for the year ended on March 31, 2017.

*The additional information was as under:*

1. Subscription Outstanding as on March 31, 2016 were Rs. 6,500,
2. Subscription received in advance as on March 31, 2016 were Rs. 4,100,
3. Subscription Outstanding as on March 31, 2017 were Rs. 5,400,
4. Subscription received in advance as on March 31, 2017 were Rs. 2,500.

Show how that above information would appear in the final accounts for the year ended on March 31, 2017 of Maitrey Sports Club.

(**Ans** : Subscription credited to Income and Expenditure Account for the year ended on March 31, 2017 is Rs. 69,000. Subscription Outstanding as on 31.3.2017 is Rs. 5,400 and should be shown on the assets side of the Balance sheet as on March 31, 2017 and subscriptions of Rs. 2,500 received in advance as on March 31, 2017 on the liabilities side of the balance sheet as on March 31, 2017)

15. Following is the Receipt and Payment account of Rohatgi Trust :

**Receipt and Payment Account for the year ending December 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Cash in hand | | 14,000 | Rent | 6,000 |
| Cash at bank | | 60,000 | Salary | 12,000 |
| Subscription: | | | Postage | 300 |
| 2016 | 5,000 | | Electricity charges | 6,000 |
| 2017 | 83,000 | | Purchase of furniture | 20,000 |
| 2018 | 3,000 | 91,000 | Books | 3,000 |
| Sale of investment | | 90,000 | Defence Bonds | 1,50,000 |
| Interest on investment | | 2,000 | Help to needy students | 22,000 |
| Sale of furniture | | 3,200 | Cash in hand | 10,900 |
| (book value Rs.3,000) | | | Cash at bank | 30,000 |
| | | **2,60,200** | | **2,60,200** |

Prepare Income and expenditure account for the year ended December 31, 2017, and a balance sheet as on that date after the following adjustments: Subscription for 2017, still owing were Rs. 7,000. Interest due on defence bonds was Rs.7,000, Rent still owing was Rs. 1,000. The Book value of investment sold was Rs. 80,000, Rs. 30,000 of the investment were still in hand. Subscription received in 2017 included Rs. 400 from a life member. The total furniture on January 1, 2017 was worth Rs.12,000. Salary paid for the year 2018 is Rs.2,000.

(**Ans :** Surplus Rs. 63,500, Total of Closing Balance Sheet Rs. 2,68,900)

16. Following Receipt and Payment Account was prepared from the cash book of Delhi Charitable Trust for the year ending December 31, 2017

**Receipt and Payment Account for the year ending December 31, 2017**

| *Receipts* | *Amount (Rs.)* | *Payment* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d | | Charity | 11,500 |
| Cash in hand | 11,500 | Rent and taxes | 3,200 |
| Cash at bank | 12,600 | Salary | 6,000 |
| Donation | 9,000 | Printing | 600 |
| Subscription: | 42,800 | Postage | 300 |
| Legacies | 18,000 | Advertisements | 4,500 |
| Interest on investment | 4,500 | Insurance es | 2,000 |
| Sale of old newspapers | 200 | Furniture | 21,600 |
| | | Investment | 23,000 |
| | | Balance c/d: | |
| | | Cash in hand | 9,900 |
| | | Cash at bank | 16,000 |
| | **98,600** | | **98,600** |

Prepare Income and expenditure account for the year ended December 31, 2017, and a balance sheet as on that date after the following adjustments:

(a) It was decided to treat one-third of the amount received on account of donation as income.

(b) Insurance premium was paid in advance for three months.

(c) Interest on investment Rs.1,100 accrued was not received.

(d) Rent Rs.600: salary Rs.900 and advertisement expenses Rs.1,000 outstanding as on December 31, 2018.

(**Ans :** Surplus Rs.21,400, Total of Closing Balance Sheet Rs.72,000)

17. From the following Receipt and Payment Account of a club, prepare Income and Expenditure Account for the year ended March 31, 2017 and the Balance Sheet as on that date.

**Receipt and Payment Account for the year ending March 31, 2017**

| *Receipts* | | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|---|
| Balance b/d | | 3,500 | General expenses | 900 |
| Subscription: | | | Salary | 16,000 |
| 2015-16 | 2,000 | | Postage | 1,300 |
| 2016-17 | 70,000 | | Electricity charges | 7,800 |
| 2017-18 | 3,000 | 75,000 | Furniture | 26,500 |
| Sale of old Books (costing Rs.3,200) | | 2,000 | Books | 13,000 |
| | | | Newspapers | 600 |
| Rent from use of hall | | 17,000 | Meeting expenses | 7,200 |
| Sale of newspapers | | 400 | T.V. set | 16,000 |
| Profit from entertainment | | 7,300 | Balance c/d | 15,900 |
| | | **1,05,200** | | **1,05,200** |

*Additional Information:*

(a) The club has 100 members each paying an annual subscription of Rs.900. Subscriptions outstanding on March 31, 2016 were Rs.3,600.

(b) On March 31, 2017, salary outstanding amounted to Rs.1,000, Salary paid included Rs. 1,000 for the year 2016.

(c) On April 1, 2017 the club owned land and building Rs.25,000, furniture Rs.2,600 and books Rs.6,200.

(**Ans :** Surplus Rs.79,700, Total of Closing Balance Sheet Rs.1,23,600)

18. Following is the Receipt and Payment Account of Women's Welfare Club for the year ended December 31, 2017:

**Receipt and Payment Account for the year ending December 31, 2017**

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d | 7,250 | Salary | 12,500 |
| Subscriptions | 81,750 | Stationery | 1,700 |
| Donations | 3,000 | Electricity charges | 9,550 |
| Grant from Government | 15,000 | Insurance | 7,500 |
| Sale of newspapers | 300 | Equipments | 30,000 |
| Proceeds of charity show | 16,500 | Petty expenses | 500 |
| Interest on investments @ 10% for full year | 7,000 | Expenses on charity show | 12,900 |
| | | Newspapers | 1,000 |
| Sundries income | 400 | Lectures fee | 16,500 |
| | | Honorarium to Secretary | 12,000 |
| | | Balance c/d | 27,050 |
| | **1,31,200** | | **1,31,200** |

*Additional Information:*

| | *01.01.2017 Rs.* | *31.12.2017 Rs.* |
|---|---|---|
| Outstanding salaries | 1,200 | 1,800 |
| Insurance prepaid | 700 | 300 |
| Subscription outstanding | 3,750 | 2,500 |
| Subscription received in advanced | 1,750 | 1,000 |
| Electricity charges outstanding | — | 1,250 |
| Stock of stationery | 2,250 | 700 |
| Equipments | 25,600 | 50,200 |
| Building | 1,20,000 | 1,14,000 |

Prepare Income and Expenditure Account for the year ended December 31, 2017 and Balance Sheet as on date.

(**Ans :** Surplus Rs.34,100, Total of Closing Balance Sheet Rs.2,64,750)

19. As at March 31, 2015 the following balances have been extrated from the books of the Indian Chartered Accountants Recreation Club and you are asked to prepare (1) Trading Account for ascertaining gross profit derived from running resturant and dining room and (2) Income and Expenditure Account for the year ended March 31, 2017 (3) and a Balance Sheet as at that date.

| *Debit Balances* | | *Credit Balances* | |
|---|---|---|---|
| | *Rs.* | | *Rs.* |
| Stock-in-hand | 1170 | Receipts Dining Room | 87,660 |
| Purchases | 24,660 | Subscriptions | 9,450 |
| Dining Room | 32,370 | Billiard's Receipts | 7,300 |
| Rent | 10,470 | Sunday Receipts | 410 |
| Wages | 18,690 | Interest on Fixed Deposit | 270 |
| Repairs and Renewals | 5,400 | Sundry Credtiors | 5370 |
| Fuel and Light | 5,280 | Grant from Institute | 42,000 |
| Misc. Expenses | 4,050 | (permanent) | |
| Cash in hand | 560 | Income and Exp. A/c | 1,380 |
| Cash at bank | 2,760 | (2016) | |
| Fixed Deposit | 8,500 | | |
| Sundry Debtors | 2,250 | | |
| China glass, cutlery & linen | 600 | | |
| Billiard Table | 2,070 | | |
| Fixtures and Fittings | 870 | | |
| Furniture | 4,140 | | |
| Club Premises | 30,000 | | |
| | **1,53,840** | | **1,53,840** |

On March 31,2016 stock of restaurant consisted of Rs. 900 and Rs. 60 respectively. Provide depreciations Rs. 60 on fixtures and fittings, Rs. 390 on billiard table and Rs. 560 on furniture.

(Ans: Excess of income over expenditure– Rs. 2,950: Total of Balance Sheet Rs. 51,700)

## *Check-list to Test your Understanding*

*Test your Understanding – I*

Ans. TRUE: (iii) (vi) (vii) (x); FALSE: (i) (ii) (iv).(v).(viii).(ix).

*Test your Understanding – II*

1. There is a specific tournament fund. The accounting treatment is as under:

| *Liabilities side of the Balance Sheet* | *Amount (Rs.)* |
|---|---|
| Tournament fund | 40,000 |
| *Add:* Receipts from tournament | 16,000 |
| | 56,000 |
| *Less:* Tournament Expenses | 14,000 |
| Balance to remain on the Liabilities side of the Balance Sheet | **42,000** |

2. There is no specific fund. So the amount incurred on Table Tennis match expenses Rs. 4,000 would be shown on the debit side of Income and Expenditure Account. It is the case of expenses independent of any specific fund.

3. There is a specific fund. The accounting treatment is as under:

| *Liabilities side of the Balance Sheet* | *Amount (Rs.)* |
|---|---|
| Prize Fund | 22,000 |
| *Add:* Interest | 3,000 |
| | 25,000 |
| Less: Prizes Paid | 5,000 |
| Balance to remain on the Liabilities side of the Balance Sheet | 20,000 |
| Prize fund Investments would appear on the Assets Side of the Balance Sheet | **18,000** |

4. There is no specific fund. Receipts from Charity Show would be shown on the credit side and expenses on charity show are deducted from the receipts and the net amount would be shown on the credit side of Income and Expenditure Account.

# Accounting for Partnership : Basic Concepts 2

**Learning Objectives**

*After studying this chapter, you will be able to :*

- *Define partnership and list its essential features;*
- *Identify the provisions of the Indian Partnership Act 1932 that are relevant for accounting;*
- *Prepare partners' capital accounts under fixed and fluctuating capital methods;*
- *Explain the distribution profit or loss among the partners and prepare the Profit and Loss Appropriation Account;*
- *Calculate interest on capital and drawing under various situations;*
- *Explain how guarantee for a minimum amount of profit affects the distribution of profits among the partners;*
- *Make necessary adjustments to rectify the past errors in partners capital accounts; and*
- *Prepare final accounts of a partnership firm;*

You have learnt about the preparation of final accounts for a sole proprietary concern. As the business expands, one needs more capital and larger number of people to manage the business and share its risks. In such a situation, people usually adopt the partnership form of organisation. Accounting for partnership firms has it's own peculiarities, as the partnership firm comes into existence when two or more persons come together to establish business and share its profits. On many issues affecting distribution of profits, there may not be any specific agreement between the partners. In such a situation the provisions of the Indian Partnership Act 1932 apply. Similarly, calculation of interest on capital, interest on drawings and maintenance of partners capital accounts have their own peculiarities. Not only that a variety of adjustments are required on the death of a partner or when a new partner is admitted and so on. These peculiar situations need specific treatment in accounting that need to be clarified.

The present chapter discusses some basic aspects of partnership such as distribution of profit, maintenance of capital accounts, etc. The treatment of situations like admission of partner, retirement, death and dissolution have been taken up in the subsequent chapters.

## 2.1 Nature of Partnership

When two or more persons join hands to set up a business and share its profits and losses, they are said to be in partnership. Section 4 of the Indian Partnership Act 1932 defines partnership as the *'relation between persons who have agreed to share the profits of a business carried on by all or any of them acting for all'*.

Persons who have entered into partnership with one another are individually called 'partners' and collectively called 'firm'. The name under which the business is carried is called the 'firm's name'. A partnership firm has no separate legal entity, apart from the partners constituting it. Thus, the essential features of partnership are:

1. *Two or More Persons:* In order to form partnership, there should be at least two persons coming together for a common goal. In other words, the minimum number of partners in a firm can be two. There is however, a limit on their maximum number. By virtue of Section 464 of the Companies Act 2013, the Central Government is empowered to prescribe maximum number of partners in a firm but the number of partners can not be more than 100. The Central government has prescribed the maximum number of partness in a firm to be 50 under Rule 10 of the Companies (Miscellaneous) Rules, 2014, So, a partnership firm cannot have more than 50 partners.
2. *Agreement:* Partnership is the result of an agreement between two or more persons to do business and share its profits and losses. The agreement becomes the basis of relationship between the partners. It is not necessary that such agreement is in written form. An oral agreement is equally valid. But in order to avoid disputes, it is preferred that the partners have a written agreement.
3. *Business:* The agreement should be to carry on some business. Mere co-ownership of a property does not amount to partnership. For example, if Rohit and Sachin jointly purchase a plot of land, they become the joint owners of the property and not the partners. But if they are in the business of purchase and sale of land for the purpose of making profit, they will be called partners.
4. *Mutual Agency:* The business of a partnership concern may be carried on by all the partners or any of them acting for all. This statement has two important implications. First, every partner is entitled to participate in the conduct of the affairs of its business. Second, that there exists a relationship of mutual agency between all the partners. Each partner carrying on the business is the principal as well as the agent for all the other partners. He can bind other partners by his acts and also is bound by the acts of other partners with regard to business of the firm. Relationship of mutual agency is so important that one can say that there would be no partnership, if the element of mutual agency is absent.
5. *Sharing of Profit:* Another important element of partnership is that, the agreement between partners must be to share profits and losses of a business. Though the definition contained in the Partnership Act describes partnership as relation between people who agree to share the profits of a business, the sharing of loss is implied. Thus, sharing of profits and

losses is important. If some persons join hands for the purpose of some charitable activity, it will not be termed as partnership.

6. *Liability of Partnership:* Each partner is liable jointly with all the other partners and also severally to the third party for all the acts of the firm done while he is a partner. Not only that the liability of a partner for acts of the firm is also unlimited. This implies that his private assets can also be used for paying off the firm's debts.

**Limited Liability Partnership**

Limited Liability Partnership (LLP) is an incorporated partnership formed and registered under the Limited Liability Partnership Act., 2008 with limited liability and peretual succession.

It is viewed as an alternative corporate business vehicle that provides the benefits of limited liability but allows its partners the flexibility of organising their internal structure as a partnership based on a mutually arrived agreement.

**Salient Features**

The salient features of Limited Liability Partnership are as follows :

1. Limited Liability Partnership is a corporate and a legal entity separate from is partners.
2. Every Limited Liability Partnership shall have at least two partners and shall also have at least two individuals as designated partners, of whom at least one shall be a resident in India.
3. The Indian Partnership Act, 1932, shall not be applicable to Limited Liability Partnership.
4. The Limited Liability Partnership has a perpetual succession.
5. The Central government has the power to investigate into the affairs of a Limited `Liability Partnership, if required, by appointment of a Competent Inspector for the purpose.

## 2.2 Partnership Deed

Partnership comes into existence as a result of agreement among the partners. The agreement can be either oral or written. The Partnership Act does not require that the agreement must be in writing. But wherever it is in writing, the document, which contains terms of the agreement is called 'Partnership Deed'. It generally contains the details about all the aspects affecting the relationship between the partners including the objective of business, contribution of capital by each partner, ratio in which the profits and the losses will be shared by the partners and entitlement of partners to interest on capital, interest on loan, etc.

The clauses of partnership deed can be altered with the *consent of all the partners***.** The deed should be properly drafted and prepared as per the provisions of the 'Stamp Act' and preferably registered with the Registrar of Firms.

**Contents of the Partnership Deed**

The Partnership Deed usually contains the following details:

- Names and Addresses of the firm and its main business;
- Names and Addresses of all partners;

- Amount of capital to be contributed by each partner;
- The accounting period of the firm;
- The date of commencement of partnership;
- Rules regarding operation of Bank Accounts;
- Profit and loss sharing ratio;
- Rate of interest on capital, loan, drawings, etc;
- Mode of auditor's appointment, if any;
- Salaries, commission, etc, if payable to any partner;
- The rights, duties and liabilities of each partner;
- Treatment of loss arising out of insolvency of one or more partners;
- Settlement of accounts on dissolution of the firm;
- Method of settlement of disputes among the partners;
- Rules to be followed in case of admission, retirement, death of a partner; and
- Any other matter relating to the conduct of business.

Normally, the partnership deed covers all matters affecting relationship of partners amongst themselves. However, if there is no express agreement on certain matters, the provisions of the Indian Partnership Act, 1932 shall apply.

### 2.2.1 Provisions Relevant for Accounting

The important provisions affecting partnership accounts are as follows:

(a) *Profit Sharing Ratio:* If the partnership deed is silent about the profit sharing ratio, the profits and losses of the firm are to be shared equally by partners, irrespective of their capital contribution in the firm.

(b) *Interest on Capital:* No partner is entitled to claim any interest on the amount of capital contributed by him in the firm as a matter of right. However, interest can be allowed when it is expressly agreed to by the partners. Thus, no interest on capital is payable if the partnership deed is silent on the issue. Further the interest is payable only out of the profits of the business and not if the firm incurs losses during the period.

(c) *Interest on Drawings:* No interest is to be charged on the drawings made by the partners, if there is no mention in the Deed.

(d) *Interest on Advances:* If any partner has advanced some money to the firm beyond the amount of his capital for the purpose of business, he shall be entitled to get an interest on the amount at the rate of 6 per cent per annum.

(e) *Remuneration for Firm's Work:* No partner is entitled to get salary or other remuneration for taking part in the conduct of the business of the firm unless there is a provision for the same in the Partnership Deed.

Apart from the above, the Indian Partnership Act specifies that subject to contract between the partners:

(i) If a partner derives any profit for him/her self from any transaction of the firm or from the use of the property or business connection of the firm or the firm name, he/she shall account for the profit and pay it to the firm.

(ii) If a partner carries on any business of the same nature as and competing with that of the firm, he/she shall account for and pay to the firm, all profit made by him/her in that business.

**Test your Understanding – I**

1. Mohan and Shyam are partners in a firm. State whether the claim is valid if the partnership agreement is silent in the following matters:
   (i) Mohan is an active partner. He wants a salary of Rs. 10,000 per year;
   (ii) Shyam had advanced a loan to the firm. He claims interest @ 10% per annum;
   (iii) Mohan has contributed Rs. 20,000 and Shyam Rs. 50,000 as capital. Mohan wants equal share in profits.
   (iv) Shyam wants interest on capital to be credited @ 6% per annum.
2. State whether the following statements are true or false:
   (i) Valid partnership can be formulated even without a written agreement between the partners;
   (ii) Each partner carrying on the business is the principal as well as the agent for all the other partners;
   (iii) Maximum number of partners can be 50;
   (iv) Methods of settlement of dispute among the partners can't be part of the partnership deed;
   (v) If the deed is silent, interest at the rate of 6% p.a. would be charged on the drawings made by the partner;
   (vi) Interest on partner's loan is to be given @ 12% p.a. if the deed is silent about the rate.

## 2.3 Special Aspects of Partnership Accounts

Accounting treatment for partnership firm is similar to that of a sole proprietorship business with the exception of the following aspects:

- Maintenance of Partners' Capital Accounts;
- Distribution of Profit and Loss among the partners;
- Adjustments for Wrong Appropriation of Profits in the Past;
- Reconstitution of the Partnership Firm; and
- Dissolution of Partnership Firm.

The first three aspects mentioned above have been taken up in the following sections of this chapter. The remaining aspects have been covered in the subsequent chapters.

## 2.4 Maintenance of Capital Accounts of Partners

All transactions relating to partners of the firm are recorded in the books of the firm through their capital accounts. This includes the amount of money brought in as capital, withdrawal of capital, share of profit, interest on capital, interest on drawings, partner's salary, commission to partners, etc.

There are two methods by which the capital accounts of partners can be maintained. These are: (i) fixed capital method, and (ii) fluctuating capital method. The difference between the two lies in whether or not the transactions other than addition/withdrawal of capital are recorded in the capital accounts of the partners.

(a) *Fixed Capital Method:* Under the fixed capital method, the capitals of the partners shall remain fixed unless additional capital is introduced or a part of the capital is withdrawn as per the agreement among the partners.

All items like share of profit or loss, interest on capital, drawings, interest on drawings, etc. are recorded in a separate accounts, called Partner's Current Account. The partners' capital accounts will always show a credit balance, which shall remain the same (fixed) year after year unless there is any addition or withdrawal of capital. The partners' current account on the other hand, may show a debit or a credit balance. Thus under this method, two accounts are maintained for each partner viz., capital account and current account, While the partners' capital accounts shall always appear on the liabilities side in the balance sheet, the partners' current account's balance shall be shown on the liabilities side, if they have credit balance and on the assets side, if they have debit balance.

The partner's capital account and the current account under the fixed capital method would appear as shown below:

**Partner's Capital Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Bank (permanent withdrawal of capital) | | xxx | | Balance b/d (opening balance) | | xxx |
| | Balance c/d (closing balance) | | xxx | | Bank (fresh capital introduced) | | xxx |
| | | | xxx | | | | xxx |

**Partner's Current Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Balance b/d (in case of debit opening bal,) | | xxx | | Balance b/d (in case of credit opening balance) | | xxx |
| | Drawings | | xxx | | Salary | | xxx |
| | Interest on drawings | | xxx | | Commission | | xxx |
| | Profit & Loss a/c | | xxx | | Interest on capital | | |
| | | | | | Profit & Loss Appropriation (share of profit) | | xxx |
| | Balance c/d (in case of credit closing balance) | | xxx | | Balance c/d (in case of debit closing balance) | | xxx |
| | | | xxxx | | | | xxxx |

**Fig. 2.1:** *Proforma of Partner's Capital and Current Account under Fixed Capital Method.*

(b) *Fluctuating Capital Method:* Under the fluctuating capital method, only one account, i.e. capital account is maintained for each partner. All the adjustments such as share of profit and loss, interest on capital, drawings, interest on drawings, salary or commission to partners, etc are recorded directly in the capital accounts of the partners. This makes the balance in the capital account to fluctuate from time to time. That's the reason why this method is called fluctuating capital method. In the absence of any instruction, the capital account should be prepared by this method. The proforma of capital accounts prepared under the fluctuating capital method is given below:

**Partner's Capital Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Drawings | | xxx | | Balance b/d | | xxx |
| | | | | | Bank (fresh capital introduced) | | xxx |
| | Interest on drawings | | xxx | | Salaries | | xxx |
| | Profit and Loss A/c (for share of loss) | | xxx | | Interest on capital | | xxx |
| | Balance c/d | | | | Profit and Loss Appropriation (for share of profit) | | xxx |
| | | | xxxx | | | | xxxx |

**Fig. 2.2:** *Proforma of Partner's Capital Account under Fluctuating capital Method.*

### *2.4.1 Distinction between Fixed and Fluctuating Capital Accounts*

The main points of differences between the fixed and fluctuating capital methods can be summed up as follows:

| *Basis of Distinction* | *Fixed Capital Account* | *Fluctuating Capital Account* |
|---|---|---|
| (i) Number of accounts | Under this method, two separate accounts are maintained for each partner viz. 'capital account' and ' current account'. | Each partner has one account, i.e. capital account, under this method |
| (ii) Adjustments | All adjustments for drawings, salary, interest on capital, etc. are made in the current accounts and not in the capital accounts. | All adjustments for drawings, salary interest on capital, etc., are made in the capital accounts, |
| (iii) Fixed balance | The capital account balance remain unchanged unless there is addition to or withdrawal of capital. | The balance of the capital account fluctuates from year to year |
| (iv) Credit balance | The capital accounts always show a credit balance. | The capital account may sometimes show a debit balance. |

***Illustration 1***

Sameer and Yasmin are partners with capitals of Rs.15,00,000 and Rs. 10,00,000 respectively. They agree to share profits in the ratio of 3:2. Show how the following transactions will be recorded in the capital accounts of the partners in case: (i) the capitals are fixed, and (ii) the capitals are fluctuating. The books are closed on March 31, every year.

| *Particulars* | *Sameer (Rs.)* | *Yasmin (Rs.)* |
|---|---|---|
| Additional capital contributed on July 1, 2014 | 3,00,000 | 2.00,000 |
| Interest on capital | 5 % | 5 % |
| Drawings (during 2014-15) | 30,000 | 20,000 |
| Interest on drawings | 1,800 | 1,200 |
| Salary | 20.000 | |
| Commission | 10,000 | 7,000 |
| Share in loss for the year 2014-15 | 60,000 | 40,000 |

***Solution***

*Fixed Capital Method*

**Partner's Capital Accounts**

*Dr.* *Cr.*

| *Date* | *Details* | *L.F.* | *Sameer Amount (Rs.)* | *Yasmin Amount (Rs.)* | *Date* | *Details* | *L.F.* | *Sameer Amount (Rs.)* | *Yasmin Amount (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Balance c/d | | 18,00,000 | 12,00,000 | | Balance b/d | | 15,00,000 | 10,00,000 |
| | | | | | | (Additional capital) | | 3,00,000 | 2,00,000 |
| | | | **18,00,000** | **12,00,000** | | | | **18,00,000** | **12,00,000** |

**Partner's Current Accounts**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.) Sameer* | *Amount (Rs.) Yasmin* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.) Sameer* | *Amount (Rs.) Yasmin* |
|---|---|---|---|---|---|---|---|---|---|
| | Drawings | | 30,000 | 20,000 | | Interest on capital | | 82,500 | 55,000 |
| | Interest on drawings | | 1,800 | 1,200 | | Partner's salary | | 20,000 | 7,000 |
| | Profit and Loss A/c | | 60,000 | 40,000 | | Commission | | 10,000 | |
| | Balance c/d | | 20,700 | 800 | | | | | |
| | | | **1,12,500** | **62,000** | | | | **1,12,500** | **62,000** |

*Working Notes:*

*Calculation of interest on capitals:*

| | | Rs. | | Rs. |
|---|---|---|---|---|
| X | 5% on Rs. 15,00,000 for 1 Year | $= 5 \times \frac{15,00,000}{100}$ | = | 75,000 |
| | 5% on Rs. 3,00,000 for 6 months | $= 5 \times \frac{3,00,000}{100} \times \frac{6}{12}$ | = | 7,500 |
| | | | | **82,500** |
| Y | 5% on Rs. 10,00,000 for 1 year | $= 5 \times \frac{10,00,000}{100}$ | = | 50,000 |
| | 5% on Rs. 2,00,000 for 6 month | $= 5 \times \frac{2,00,000}{100} \times \frac{6}{12}$ | = | 5,000 |
| | | | | **55,000** |

*Fluctuating Capital Method*

*Dr,* **Partner's Capital Accounts** *Cr.*

| Date | Particulars | J.F. | Amount (Rs.) Sameer | Amount (Rs.) Yasmin | Date | Particulars | J.F. | Amount (Rs.) Sameer | Amount (Rs.) Yasmin |
|---|---|---|---|---|---|---|---|---|---|
| | Drawings | | 30,000 | 20,000 | | Balance b/d | | 15,00,000 | 10,00,000 |
| | Interest on Drawings | | 1800 | 1200 | | Bank | | 3,00,000 | 2,00,000 |
| | Profit and Loss | | 60,000 | 40,000 | | Interest on capital | | 82,500 | 55,000 |
| | Balance c/d | | 18,20,700 | 12,00,800 | | Salary | | 20,000 | 7000 |
| | | | | | | Commission | | 10,000 | - |
| | | | **19,12,500** | **12,62,000** | | | | **19,12,500** | **12,62,000** |

**Do it Yourself**

1. Soumya and Bimal are partners in a firm Sharing profits and losses in the ratio of 3:2. The balance in their capital and current accounts as on April 01, 2017 were as under:

| | *Soumya (Rs.)* | *Bimal (Rs.)* |
|---|---|---|
| Capital Accounts | 3,00,000 | 2,00,000 |
| Current Accounts (Cr.) | 1,00,000 | 80,000 |

The partnership deed provides that Soumya is to be paid salary @ Rs, 500 per month where as Bimal is to get a commission of Rs. 40,000 for the year. Interest on capital is to be credited at 6% p.a. The drawings of Soumya and Bimal for the year were Rs. 30,000 and Rs. 10,000 respectively. The net profit of the firm before making these adjustment was Rs, 2,49,000. Interest on Soumya's drawings was Rs. 750 and Bimal's drawings, Rs. 250. Prepare Profit and Loss Appropriation Account and Partner's Capital and Current Accounts.

2. Soniya, Charu and Smita started a partnership firm on April 1, 2017. They contributed Rs, 5,00,000, Rs. 4,00,000 and Rs. 3,00,000 respectively as their capitals and decided to share profits and losses in the ratio of 3:2:1.

The partnership provides that Soniya is to be paid a salary of Rs. 10,000 per month and Charu a commission of Rs. 50,000. It also provides that interest on capital be allowed @6% p.a. The drawings for the year were Soniya Rs. 60,000, Charu Rs. 40,000 and Smita Rs. 20,000. Interest on drawings was charged as Rs. 2,700 on Soniya's drawings, Rs. 1,800 on Charu's drawings and Rs. 900 on Smita's drawings. The net amount of profit as per Profit and Loss Account for the year 2015-16 was Rs. 3,56,600.

(i) Record necessary journal entries.
(ii) Prepare profit and loss appropriation account
(iii) Show capital accounts of the partners.

## 2.5 Distribution of Profit among Partners

The profits and losses of the firm are distributed among the partners in an agreed ratio. However, if the partnership deed is silent, the firm's profits and losses are to be shared equally by all the partners.

You know that in the case of sole partnership the profit or loss, as ascertained by the profit and loss account is transferred to the capital account of the proprietor. In case of partnership, however, certain adjustments such as interest on drawings, interest on capital, salary to partners, and commission to partners are required to be made. For this purpose, it is customary to prepare a Profit and Loss Appropriation Account of the firm and ascertain the final figure of profit and loss to be distributed among the partners, in their profit sharing ratio.

### *2.5.1 Profit and Loss Appropriation Account*

Profit and Loss Appropriation Account is merely an extension of the Profit and Loss Account of the firm. It shows how the profits are appropriated or distributed among the partners. All adjustments in respect of partner's salary, partner's commission, interest on capital, interest on drawings, etc. are made through this account. It starts with the net profit/net loss as per Profit and Loss Account is transfered to this account. The journal entries for preparation of Profit and Loss Appropriation Account and making various adjustments through it are given as follows:

*Journal Entries*

1. Transfer of the balance of Profit and Loss Account to Profit and Loss Appropriation Account:
   (a) If Profit and Loss Account shows a credit balance (net profit):
   Profit and Loss A/c Dr.
   To Profit and Loss Appropriation A/c
   (b) If Profit and Loss Account shows a debit balance (net loss)
   Profit and Loss Appropriation A/c Dr.
   To Profit and Loss A/c
2. Interest on Capital:
   (a) For crediting interest on capital to partners' capital account:
   Interest on Capital A/c Dr.
   To Partner's Capital/Current A/cs (individually)

(b) For transferring interest on capital to Profit and Loss Appropriation Account:
Profit and Loss Appropriation A/c Dr.
To Interest on Capital A/c

3. Interest on Drawings:
(a) For charging interest on drawings to partners' capital accounts:
Partners Capital/Current A/c's (individually) Dr.
To Interest on Drawings A/c
(b) For transferring interest on drawings to Profit and Loss Appropriation Account:
Interest on Drawings A/c Dr.
To Profit and Loss Appropriation A/c

4. Partner's Salary:
(a) For crediting partner's salary to partner's capital account:
Salary to Partner A/c Dr.
To Partner's Capital/Current A/c's (individually)
(b) For transferring partner's salary to Profit and Loss Appropriation Account:
Profit and Loss Appropriation A/c Dr.
To Salary to Partner's A/c

5. Partner's Commission:
(a) For crediting commission to a partner, to partner's capital account:
Commission to Partner A/c Dr.
To Partner's Capital/Current A/c's (individually)
(b) For transferring commission paid to partners to Profit and Loss Appropriation Account.
Profit and Loss Appropriation A/c Dr.
To Commission to Partners Capital/Current A/c

6. Share of Profit or Loss after appropriations:
If Profit:
Profit and Loss Appropriation A/c Dr.
To Partner's Capital/Current A/c's (individually)

The Proforma of Profit and Loss Appropriation Account is given as follows:

**Profit and Loss Appropriation Account**

*Dr.* *Cr.*

| *Particulars* | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|
| Profit and Loss | | Profit and Loss | xxx |
| (if there is loss) | xxx | (if there is profit) | |
| Interest on Capital | xxx | Interest on Drawings | xxx |
| Salary to Partner | xxx | | xxx |
| Commission to Partner | xxx | | |
| Interest on Partner's Loan | xxx | | |
| Partners' Capital Accounts | xxx | | |
| (distribution of profit) | | | |
| | **xxxx** | | **xxxx** |

**Fig. 2.3:** *Proforma of Profit and Loss Appropriation Account*

### *Illustration 2*

Amit, Babu and Charu set up a partnership firm on April 1, 2015. They contributed Rs. 50,000, Rs. 40,000 and Rs. 30,000, respectively as their capitals and agreed to share profits and losses in the ratio of 3 : 2 :1. Amit is to be paid a salary of Rs. 1,000 per month and Babu, a Commission of Rs. 5,000. It is also provided that interest to be allowed on capital at 6% p.a. The drawings for the year were Amit Rs. 6,000, Babu Rs. 4,000 and Charu Rs. 2,000. Interest on drawings of Rs. 270 was charged on Amit's drawings, Rs. 180 on Babu's drawings and Rs. 90, on Charu's drawings. The net profit as per Profit and Loss Account for the year ending March 31, 2015 was Rs. 35,660. Prepare the Profit and Loss Appropriation Account to show the distribution of profit among the partners.

### *Solution*

**Profit and Loss Appropriation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Amits' salary | | 12,000 | Net profit | | 35,660 |
| Babus' commission | | 5,000 | Interest on drawings: | | |
| Interest on Capitals : | | | Amit | 270 | |
| Amit | 3,000 | | Babu | 180 | |
| Babu | 2,400 | | Charu | 90 | 540 |
| Charu | 1,800 | 7,200 | | | |
| Share of profit transferred to Capital accounts : | | | | | |
| Amit | 6,000 | | | | |
| Babu | 4,000 | | | | |
| Charu | 2,000 | 12,000 | | | |
| | | **36,200** | | | **36,200** |

### *Illustration 3*

Amitabh and Babul are partners sharing profits in the ratio of 3:2, with capitals of Rs. 50,000 and Rs. 30,000 respectively. Interest on capital is agreed @ 6% p.a. Babul is to be allowed an annual salary of Rs. 2,500. During the year 2016-17, the profits prior to the calculation of interest on capital but after charging Babul's salary amounted to Rs. 12,500. A provision of 5% of the profit is to be made in respect of commission to the Manager.

Prepare Profit and Loss Appropriation account showing the distribution of profit and the partners' capital accounts for the year ending March 31, 2017.

**Solution**

**Profit and Loss Appropriation Account**

Dr. Cr.

| Particulars | | Amount (Rs.) | Particulars | Amount (Rs.) |
|---|---|---|---|---|
| Babul's salary | | 2,500 | Net profit (before Babul's salary) | 15,000 |
| Interest on capital: | | | | |
| Amitabh | | 3,000 | | |
| Babul | | 1,800 | | |
| Manager's commission (5% of Rs. 15,000) | | 750 | | |
| Profit transferred to partner's capital account; | | | | |
| Amitabh | 4,170 | | | |
| Babul | 2,780 | 6,950 | | |
| | | **15,000** | | **15,000** |

**Amitabh's Capital Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs.) | Date 2016 | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Balance c/d | | 57,170 | 2016 Apr.01 | Balance b/d | | 50,000 |
| | | | | 2017 Mar.31 | Interest on capital | | 3,000 |
| | | | | Mar.31 | Profit & Loss Appropriation a/c (share of profit) | | 4,170 |
| | | | **57,170** | | | | **57,170** |

**Babul's Capital Account**

Dr. Cr.

| Date 2017 | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Balance c/d | | 37,080 | 2016 Apr.01 | Balance b/d | | 30,000 |
| | | | | 2017 | Salary | | 2,500 |
| | | | | Mar.31 | Interest on capital | | 1,800 |
| | | | | Mar.31 | Profit & Loss Appropriation (share of profit) | | 2,780 |
| | | | **37,080** | | | | **37,080** |

**Test your Unerstanding – II**

1. Raju and Jai commenced business in partnership on April 1, 2017. *No partnership agreement was made whether oral or written.* They contributed Rs. 4,00,000 and Rs. 1,00,000 respectively as capitals. In addtion, Raju advanced Rs. 2,00,000 as loan to the firm on October 1, 2017. Raju met with an accident on July 1, 2017 and could not attend the business up to september 30, 2017. The profit for the year ended March 31, 2018 amounted to Rs, 50,600. Disputes have arisen between them on sharing the profits of the firm.

*Raju Claims:*

(i) He should be given interest at 10% p.a. on capital and so also on loan.
(ii) Profit should he distributed in the proportion of capitals.

*Jai Claims:*

(i) Net profit should be shared equally.
(ii) He should be allowed remuneration of Rs, 1,000 p.a. during the period of Raju's illness.
(iii) Interest on capital and loan should be given @ 6% p.a.

State the correct position on each issue as per the provisions of the Partnership Act. 1932.

2. Reena and Raman are partners with capitals of Rs. 3,00,000 and Rs. 1,00,000 respectively. The profit (as per Profit and Loss Account) for the year ended March 31, 2017 was Rs. 1,20,000. Interest on capital is to be allowed at 6% p.a. Raman was entitled to a salary of Rs. 30,000 p.a. The drawings of partners were Rs. 30,000 and 20,000. The interest on drawings to be charged to Reena was Rs. 1,000 and to Raman, Rs. 500.

   Assuming that Reena and Raman are equal partners. State their share of profit after necessary appropriations.

### *2.5.2 Calculation of Interest on Capital*

No interest is allowed on partners' capitals unless it is expressly agreed among the partners. When the Deed specifically provides for it, interest on capital is credited to the partners at the agreed rate with reference to the time period for which the capital remained in business during a financial year. Interest on capital is generally provided for in two situations: (i) when the partners contribute unequal amounts of capitals but share profits equally, and (ii) where the capital contribution is same but profit sharing is unequal.

*Interest on capital is calculated with due allowance for any addition or withdrawal of capital during the accounting period.* For example, Mohini, Rashmi and Navin entered into partnership, bringing in Rs. 3,00,000, Rs. 2,00,000 and Rs. 1,00,000 respectively into the business. They decided to share profits and losses equally and agreed that interest on capital will be provided to the partners

@10 per cent per annum. There was no addition or withdrawal of capital by any partner during the year. The interest on capital works out to Rs. 30,000 (10% on 30,000) for Mohini, Rs. 20,000 (10% on 2,00,000) for Rashmi, and Rs. 10,000 (10% on 1,00,000) for Navin.

Take another case of Mansoor and Reshma who are partners in a firm and their capital accounts showed the balance of Rs. 2,00,000 and Rs. 1,50,000 respectively on April 1, 2016. Mansoor introduced additional capital of Rs. 1,00,000 on August 1, 2016 and Reshma brought in further capital of Rs. 1,50,000 on October 1, 2016. Interest is to be allowed @ 6% p.a. on the capitals. It shall be worked as follows:

For Mansoor $\left(\text{Rs. } 2{,}00{,}000 \times \frac{6}{100}\right) + \left(\text{Rs. } 1{,}00{,}000 \times \frac{6}{100} \times \frac{8}{12}\right)$

= Rs. 12,000 + Rs. 4,000 = Rs. 16,000

For Reshma $\left(\text{Rs. } 1{,}50{,}000 \times \frac{6}{100}\right) + \left(\text{Rs. } 1{,}50{,}000 \times \frac{6}{100} \times \frac{6}{12}\right)$

= Rs. 9,000+Rs. 4,500= Rs. 13,500

When there are both addition and withdrawal of capital by of partners during a financial year, the interest on capital is calculated as follows:

(i) On the opening balance of the capital accounts of partners, interest is calculated for the whole year;

(ii) On the additional capital brought in by any partner during the year, interest is calculated from the date of introduction of additional capital to the last day of the financial year.

(iii) On the amount of capital withdrawn (other than usual drawings) during the year interest for the period from the date of withdrawal to the last day of the financial year is calculated and deducted from the total of the interest calculated under points: (i) and (ii) above.

Alternatively, it can be calculated with respect to the amounts remained invested for the relevant periods.

### *Illustration 4*

Saloni and Srishti are partners in a firm. Their capital accounts as on April 01. 2016 showed a balance of Rs. 2,00,000 and Rs. 3,00,000 respectively. On July 01, 2016, Saloni introduced additional capital of Rs. 50,000 and Srishti, Rs. 60,000. On October 01 Saloni withdrew Rs. 30,000, and on January 01, 2016 Srishti withdraw, Rs. 15,000 from their capitals. Interest is allowed @ 8% p.a. Calculate interest payable on capital to both the partners during the financial year 2016–2017.

**Solution**

*Statement Showing Calculation of Interest on Capital*

*For Saloni*

| | | | (Rs.) |
|---|---|---|---|
| Interest on Rs. 2,00,000 for full year | $= \frac{\text{Rs. } 2{,}00{,}000 \times 8 \times 1}{100}$ | = | 16,000 |
| *Add:* Interest on Rs. 50,000 for 9 months | $= \frac{\text{Rs.} 50{,}000 \times 9 \times 8}{12 \times 100}$ | = | 3,000 |
| | | | 19,000 |
| *Less:* Interest on 30,000 for 6 months | $= \frac{\text{Rs.} 30{,}000 \times 8 \times 6}{12 \times 100}$ | = | 1,200 |
| | | | *17,800* |

Alternatively interest can be calculated on Rs. 2 lakh for 3 months, on Rs. 2,50,000 for 3 months, and on Rs. 2,20,000, for 6 months (Rs. 4,000 + Rs. 5,000 + Rs. 8,800 = Rs. 17,800).

*For Srishti*

| | | | (Rs.) |
|---|---|---|---|
| Interest on Rs. 3,00,000, for full year @8% | $= \frac{\text{Rs.} 3{,}00{,}000 \times 8 \times 1}{100}$ | = | 24,000 |
| *Add:* Interest on Rs. 60,000, for 9 months | $= \frac{\text{Rs.} 60{,}000 \times 8 \times 9}{100 \times 12}$ | = | 3,600 |
| | | | 27,600 |
| *Less:* Interest on Rs. 15,000 for 3 months | $= \frac{\text{Rs.} 15{,}000 \times 8 \times 3}{100 \times 12}$ | = | 300 |
| (Money withdrawn) | | | *27,300* |

Alternatively interest can be charged on Rs. 3,00,000 for 3 months on Rs. 3,60,000 for 6 months and on Rs. 3,45,000 for 3 months (Rs. 6,000 + Rs. 14,400 + Rs. 6,900 = Rs. 27,300).

### *Illustration 5*

Josh and Krish are partners sharing profits and losses in the ratio of 3:1. Their capitals at the end of the financial year 2015-2016 were Rs. 1,50,000 and Rs. 75,000. During the year 2015-2016, Josh's drawings were Rs. 20,000 and the drawings of Krish were Rs. 5,000, which had been duly debited to partner's capital accounts. Profit before charging interest on capital for the year was Rs. 16,000. The same had also been debited in their profit sharing ratio. Krish had brought additional capital of Rs. 16,000 on October 1, 2015. Calculate interest on capital @ 12% p.a. for the year 2015-2016.

### *Solution*

**Statement Showing Calculation of Capital at the Beginning**

| *Particulars* | *Josh* *Rs.* | *Krish* *Rs.* |
|---|---|---|
| Capital at the end | 1,50,000 | 75,000 |
| *Add:* Drawings during the year | 20,000 | 5,000 |
| | **1,70,000** | **80,000** |
| *Less:* Share of profit (credited) | 12,000 | 4,000 |
| | **1,58,000** | **76,000** |
| *Less:* Additional capital | —- | 16,000 |
| Capital in the beginning | 1,58,000 | 60,000 |

Interest on capital will be as 18,960 (12% of Rs. 1,58,000) for Josh and Rs. 960 for krish calculated as follows:

$$\left(\text{Rs. } 60{,}000 \times \frac{12}{100}\right) + \left(\text{Rs. } 16{,}000 \times \frac{12}{100} \times \frac{6}{12}\right) = \text{Rs. } 7{,}200 + \text{Rs. } 960$$

$$= \text{Rs. } 8{,}160.$$

Sometimes opening capitals of partners may not be given. In such a situation before calculation of interest on capital the opening capitals will have to be worked out with the help of partners' closing capitals by marking necessary adjustments for the additions and withdrawal of capital, drawings, share of profit or loss, if already shown in the capital accounts the partners.

As clarified earlier, the interest on capital is allowed only when the firm has earned profit during the accounting year. Hence, no interest will be allowed during the year the firm has incurred net loss and if in a year, the profit of the firm is less than the amount due to the partners as interest on capital, the payment of interest will be restricted to the amount of profits. In that case, the profit will be effectively distributed in the ratio of interest on capital of each partner.

### *Illustration 6*

Anupam and Abhishek are partners sharing profits and losses in the ratio of 3 : 2. Their capital accounts showed balances of Rs. 1,50,000 and Rs. 2,00,000 respectively on Jan 01, 2017. Show the treatment of interest on capital for the year ending December 31, 2017 in each of the following alternatives:

(a) If the partnership deed is silent as to the payment of interest on capital and the profit for the year is Rs. 50,000;

(b) If partnership deed provides for interest on capital @ 8% p.a. and the firm incurred a loss of Rs. 10,000 during the year;

(c) If partnership deed provides for interest on capital @ 8% p.a. and the firm earned a profit of Rs. 50,000 during the year;

(d) If the partnership deed provides for interest on capital @ 8% p.a. and the firm earned a profit of Rs. 14,000 during the year.

### *Solution*

(a) In the absence of a specific provision in the Deed, no interest will be paid on the capital to the partners. The whole amount of profit will however be distributed among the partners in their profit sharing ratio.

(b) As the firm has incurred losses during the accounting year, no interest on capital will be allowed to any partner. The firm's loss will however be shared by the partners in their profit sharing ratio.

| | | | |
|---|---|---|---|
| | | | *Rs.* |
| (c) | Interest to Anupam @ 8% on Rs. 1,50,000 | = | 12,000 |
| | Interest to Abhishek @ 8% on Rs. 2,00,000 | = | 16,000 |
| | | | **28,000** |

As the profit is sufficient to pay interest at agreed rate, the whole amount of interest on capital shall be allowed and the remaining profit amounting to Rs. 22,000 (Rs. 50,000 – Rs. 28,000) shall be shared by the partners in their profit sharing ratio.

(d) As the profit for the year is Rs. 14,000, which is less than the amount of interest on capital due to partners, i.e. Rs. 28,000 (Rs. 12,000 for Anupam and Rs. 16,000 for Abhishek), interest will be paid to the extent of available profit i.e., Rs. 14,000. Anupam and Abhishek will be credited with Rs. 6,000 and Rs. 8,000, respectively. Effectively this amounts to sharing the firm's profit in the ratio of interest on capital.

**Test your Understanding – III**

1. Rani and Suman are in partnership with capitals of Rs, 80,000 and Rs. 60,000, respectively. During the year 2015-16, Rani withdrew Rs. 10,000 from her capital and Suman Rs. 15,000. Profits before charging interest on capital was Rs. 50,000. Ravi and Suman shared profits in the ratio of 3:2. Calculate the amounts of interest on their capitals @ 12% p.a. for the year ended March 31, 2016.
2. Priya and Kajal are partners in a firm, sharing profits and losses in the ratio of 5:3. The balance in their fixed capital accounts, on April 1, 2016 were: Priya, Rs. 6,00,000 and Kajal, Rs. 8,00,000. The profit of the firm for the year ended 2017 is Rs, 1,26,000. Calculate their shares of profits: (a) when there is no agreement in respect of interest on capital, and (b) when there is an agreement that the interest on capital will be allowed @ 12% p.a.

### *2.5.3 Interest on Drawings*

The partnership agreement may also provide for charging of interest on money withdrawn out of the firm by the partners for their personal use. As stated earlier, no interest is charged on the drawings if there is no express agreement among the partners about it. However if the partnership deed so provides for it, the interest is charged at an agreed rate, for the period money remained outstanding from the partners during an accounting year. Charging interest on drawings discourages excessive amounts of drawings by the partners.

The calculation of interest on drawings under different situations is shown as here under.

*When Fixed Amounts is Withdrawn Every Month*

Many a time, a fixed amount of money is withdrawn by the partners, at equal time interval, say each month or each quarter. While calculating the time period, attention must be paid to whether the fixed amount was withdrawn at the beginning (first day) of the month, middle of the month or at the end (last day) of the month. If withdrawn on the first day of every month, interest on total amount will be calculated for 6½ months; if withdrawn at the end at every month, it will be calculated for 5½ months, and if withdrawn during the middle of the month, it will be calculated for 6 months.

Suppose, Aashish withdrew Rs. 10,000 per month from the firm for his personal use during the year ending March 31, 2017. The calculation of average period and the interest on drawings, in different situations would be as follows:

*(a) When the amount is withdrawn at the beginning of each month:*

$$\text{Average Period} = \frac{\text{Total Period in Months + 1}}{2} = \frac{12+1}{2} = 6\frac{1}{2} \text{ months.}$$

$$\text{Interest on Drawings} = \frac{\text{Rs.}1,20,000 \times 8 \times 13 \times 1}{100 \times 2 \times 12} = \text{Rs. } 5,200.$$

*(b) When the amount is withdrawn at the end of each month*

$$\text{Average Period} = \frac{\text{Total period in Months} - 1}{2} = \frac{12-1}{2} = 5\frac{1}{2} \text{ months}$$

$$\text{Interest on Drawings} = \frac{\text{Rs.}1,20,000 \times 8 \times 11 \times 1}{100 \times 2 \times 12} = \text{Rs. } 4,400.$$

*(c) When money is withdrawn in the middle of the month*

When money is withdrawn in the middle of the month, nothing is added or deduced from the total period.

$$\text{Average Period} = \frac{\text{Total period in Months}}{2} = \frac{12}{2} = 6 \text{ months}$$

$$\text{Interest on Drawings} = \frac{\text{Rs.}1,20,000 \times 8 \times 6 \times 1}{100 \times 12} = \text{Rs. } 4,800.$$

*When Fixed Amount is withdrawn Quarterly*

When fixed amount of money is withdrawn quarterly by partners, in such a situation, for the purpose of calculation of interest, the total period of time is ascertained depending on whether the money was withdrawn at the beginning or at the end of each quarter. If the amount is withdrawn at the beginning of each quarter, the interest is calculated on the total money withdrawn during the year, for a period of seven and half months and if withdrawn at the and of each quarter it will be calculated for a period of 4½ months.

Suppose Satish and Tilak are partners in a firm, sharing profits and losses equally. During financial year 2016–2017, Satish withdrew Rs. 30,000 quarterly. If interest is to be charged on drawings @ 8% per annum, the calculation of average period and interest on drawings will be as follows:

(a) *If the amount is withdrawn at the beginning of each quarter*

**Statement Showing Calculation of Interest on Drawings**

| *Date* | *Amount (Rs.)* | *Time Period* | *Interest (Rs.)* |
|---|---|---|---|
| April 1, 2016 | 30,000 | 12 months | $30,000 \times \frac{8}{100} \times 1$ = 2,400 |

| | | | |
|---|---|---|---|
| July 1, 2016 | 30,000 | 9 months | $30{,}000 \times \frac{9}{12} \times \frac{8}{100}$ = 1,800 |
| Oct. 1, 2016 | 30,000 | 6 months | $30{,}000 \times \frac{6}{12} \times \frac{8}{100}$ = 1,200 |
| Jan. 1, 2017 | 30,000 | 3 months | $30{,}000 \times \frac{3}{12} \times \frac{8}{100}$ = 600 |
| **Total** | **1,20,000** | | **= Rs. 6,000** |

Alternatively, the interest can be calculated on the total amount withdrawn during the accounting year, i.e. Rs. 1,20,000 for a period of 7½ months (12+9+6+3)/4. as follows:

Rs. 1,20,000 $\times \frac{8}{100} \times \frac{15}{2} \times \frac{1}{12}$ = Rs. 6,000.

(b) *If the amount is withdrawn at the end of each quarter*

**Statement Showing Calculation of Interest on Drawings**

| *Date* | *Amount (Rs.)* | *Time Period* | *Interest (Rs.)* |
|---|---|---|---|
| June 30, 2016 | 30,000 | 9 months | $30{,}000 \times \frac{9 \times 8}{12 \times 100}$ = 1,800 |
| September 30, 2016 | 30,000 | 6 months | $30{,}000 \times \frac{6}{12} \times \frac{8}{100}$ = 1200 |
| December 31, 2016 | 30,000 | 3 months | $30{,}000 \times \frac{3}{12} \times \frac{8}{100}$ = 6,000 |
| March 31, 2017 | 30,000 | 0 months | |
| **Total** | **1,20,000** | | **= 3,600** |

Alternatively, the interest can be calculated on the total amount withdrawn during the accounting year, i.e., Rs. 1,20,000 for a period of 4½ months (9 + 6 + 3 + 0)/4 months as follows:

= Rs. 1,20,000 $\times \frac{8}{100} \times \frac{9}{2} \times \frac{1}{12}$ = Rs. 3,600

*When Varying Amounts are Withdrawn at Different Intervals*

When the partners withdraw different amounts of money at different time intervals, the interest is calculated using the product method. Under the product method, for each withdrawal, the money withdrawn is multiplied by the period (usually expressed in months) for which it remained withdrawn during the financial year. The period is calculated from the date of the withdrawal to the last day of the accounting year. The products so calculated are totalled and interest for 1 month at the specified rate is worked out, on the total of the products. The calculation of interest can be explained with the help of an example.

Shahnaz withdrew the following amounts from her firm, for personal use during the year ending March 31, 2017. Calculate interest on drawings by product method, if the rate of interest to be charged is 7 per cent per annum.

| *Date* | *Amount (Rs.)* |
|---|---|
| April 1, 2016 | 16,000 |
| June 30, 2016 | 15,000 |
| October 31, 2016 | 10,000 |
| December 31, 2016 | 14,000 |
| March 1, 2017 | 11,000 |

Calculation of interest on drawings will be as follows:

**Statement Showing Calculation of Interest on Drawings**

| *Date* | *Amount (Rs.)* | *Time Period* | *Product (Rs.)* |
|---|---|---|---|
| April 1, 2016 | 16,000 | 12 months | 1,92,000 |
| June 30, 2016 | 15,000 | 9 months | 1,35,000 |
| Oct. 31, 2016 | 10,000 | 5 months | 50,000 |
| Dec. 31, 2016 | 14,000 | 3 months | 42,000 |
| Mar. 1, 2017 | 11,000 | 1 month | 11,000 |
| ***Total*** | | | **4,30,000** |

$$\text{Interest} = \text{Sum of Products} \times \text{Rate} \times \frac{1}{12}$$

$$= \text{Rs. } 4{,}30{,}000 \times \frac{7}{100} \times \frac{1}{12} = \frac{30100}{12} = \text{Rs. } 2{,}508 \text{ (approx.).}$$

***Illustration 7***

John Ibrahm, a partner in Modern Tours and Travels withdrew money during the year ending March 31, 2017 from his capital account, for his personal use. Calculate interest in drawings in each of the following alternative situations, if rate of interest is 9 per cent per annum.

(a) If he withdrew Rs. 3,000 per month at the beginning of the month.
(b) If an amount of Rs. 3,000 per month was withdrawn by him at the end of each month.
(c) If the amounts withdrawn were : Rs. 12,000 on June 01, 2016, Rs. 8,000; on August 31, 2016, Rs. 3,000; on September 30, 2016, Rs. 7,000, on November 30, 2016, and Rs. 6,000 on January 31, 2017.

***Solution***

(a) As a fixed amount of Rs. 3,000 per month is withdrawn at the beginning of the month, interest on drawings will be calculated for an average period of $6\frac{1}{2}$ months.

Interest on drawings = Rs. $\frac{36,000 \times 9 \times 13 \times 1}{100 \times 2 \times 12}$ = Rs. 1,755

(b) As the fixed amount of Rs. 3,000 per month is withdrawn at the end of each month, interest on drawings will be calculated for an average period of $5\frac{1}{2}$ months.

= $\frac{\text{Rs.} 36,000 \times 9 \times 11 \times 1}{100 \times 2 \times 12}$ = Rs. 1,485

**(C) Statements showing Calculation of Interest on Drawings**

| 1<br>Date | 2<br>Amount withdrawn (Rs.) | 3<br>Period (in months) | 4<br>(Interest)<br>(Rs.) |
|---|---|---|---|
| Jun. 1, 2016 | 12,000 | 10 | $12,000 \times \frac{9}{100} \times \frac{10}{12} = 900$ |
| Aug. 31, 2016 | 8,000 | 7 | $8,000 \times \frac{9}{100} \times \frac{7}{12} = 420$ |
| Sept. 30, 2016 | 3,000 | 6 | $3,000 \times \frac{9}{100} \times \frac{6}{12} = 135$ |
| Nov. 30, 2016 | 7,000 | 4 | $7,000 \times \frac{9}{100} \times \frac{4}{12} = 210$ |
| Jan. 31, 2017 | 6,000 | 2 | $6,000 \times \frac{9}{100} \times \frac{2}{12} = 90$ |
| **Total Interest** | | | **1,755** |

### *Illustration 8*

Manu, Harry and Ali are partners in a firm sharing profits and losses equally. Harry and Ali withdrew the following amounts from the firm, for their personal use, during 2015.

| *Date* | *Harry (Rs.)* | *Ali (Rs.)* |
|---|---|---|
| 2015 | | |
| January, 01 | 5,000 | 7,000 |
| April, 01 | 8,000 | 4,000 |
| September, 01 | 5,000 | 5,000 |
| December, 01 | 4,000 | 9,000 |

Calculate interest on drawings if the rate of interest to be charged is 10 per cent, and the books are closed on December 31 every year.

**Statement Showing Calculation of Interest on Drawings**

| *Harry* | | | *Ali* | | |
|---|---|---|---|---|---|
| *Amount (Rs.)* | *Period (in months)* | *Product (Rs.)* | *Amount (Rs.)* | *Period (in months)* | *Product (Rs.)* |
| 5000 | 12 | 60,000 | 7,000 | 12 | 84,000 |
| 8000 | 9 | 72,000 | 4,000 | 9 | 36,000 |
| 5000 | 4 | 20,000 | 5,000 | 4 | 20,000 |
| 4000 | 1 | 4,000 | 10,000 | 1 | 10,000 |
| | | **1,56,000** | | | **1,50,000** |

Amount of Interest

Mannu $= \text{Rs. } \dfrac{1{,}56{,}000 \times 10 \times 1}{100 \times 12} = \text{Rs. } 1{,}300$

Ali $= \text{Rs. } \dfrac{1{,}50{,}000 \times 10 \times 1}{100 \times 12} = \text{Rs. } 1{,}250$

**Do it Yourself**

1. Govind is a partner in a firm. He withdrew the following amounts during the year 2015-16:

| | *(Rs.)* |
|---|---|
| April 30, 2015 | 6,000 |
| June 30, 2015 | 4,000 |
| Sept. 30, 2015 | 8,000 |
| Dec. 31, 2015 | 3,000 |
| Jan. 31, 2016 | 5,000 |

The interest on drawings is to be charged @ 6% p.a. The books are closed on March 31, every year. calculate interest on drawing :

2. Ram and Syam are partners sharing profits/losses equally. Ram withdrew Rs. 1,000 p.m. regularly on the first day of every month during the year 2015-16 for personal expenses. If interest on drawings is charged @ 5% p.a. Calculate interest on the drawings of Ram.
3. Verma and Kaul are partners in a firm. The partnership agreement provides that interest on drawings should be charged @ 6% p.a. Verma withdraws Rs. 2,000 per month starting from April 01, 2015 to March 31, 2014. Kaul withdrew Rs, 3,000 per quarter, starting from April 01, 2015. Calculate interest on partner's drawings.

*When Dates of Withdrawal are not specified*

When the total amount withdrawn is given but the dates of withdrawals are not specified, it is assumed that the amount was withdrawn evenly throughout the year. *For example;* Shakila withdrew Rs. 60,000 from partnership firm during the year ending March 31, 2015 and the interest on drawings is to be charged at the rate of 8 per cent per annum. For calculation of interest, the period would be taken as six months, which is the average period assuming, that amount is withdrawn evenly in the middle of the month, throughout the year. The amount of interest on drawings works out to be Rs. 2,400 as follows:

$$\left(\text{Rs.}60,000 \times \frac{8}{100} \times \frac{6}{12}\right) = \text{Rs. } 2,400$$

## 2.6 Guarantee of Profit to a Partner

Sometimes a partner is admitted into the firm with a guarantee of certain minimum amount by way of his share of profits of the firm. Such assurance may be given by all the old partners in a certain ratio or by any of the old partners, individually to the new partner. The minimum guaranteed amount shall be paid to such new partner when his share of profit as per the profit sharing ratio is less than the guarnteed amount. For example, Madhulika and Rakshita, who are partners in a firm decide to admit Kanishka into their firm, giving her the guarantee of a minimum of Rs.25,000 as her share in firm's profits. The firm earned a profit of Rs.1,20,000 during the year and the agreed profit sharing ratio between the partners is decided as 2:3:1. As per this ratio, Madhulika's share in profit comes to Rs.40,000 (2/6 of Rs. 1,20,000); Rakshita, Rs. 60,000 (3/6 of Rs. 1,20,000) and Kanishka Rs. 20,000 (1/6 of Rs. 1,20,000). The share of Kanishka works out to be Rs.5,000 short of the guaranteed amount. This shall be borne by the guaranteeing partners Madhulika and Rakshita in their profit sharing ratio, which in this case is 2:3, Madhulika's share in the deficiency comes to Rs.2,000 (2/5 of Rs. 5,000), and that of Rakshita Rs.3,000. The total profit of the firm will be distributed among the partners as follows Madhulika will get Rs.38,000 (her share 40,000 minus share in deficiency Rs.2,000); Rakshita Rs.57,000 (60,000–3,000) and Kanishka Rs. 25,000 (Rs. 20,000 + Rs. 2,000 + Rs. 3,000).

If only one partner gives the guarantee, say in the above case, only Rakshita gives the guarantee, the whole amount of deficiency (Rs.5,000) will be borne by her only. In that case profit distribution will be Madhulika Rs.40,000, Rakshita Rs. 55,000 (60,000–5,000) and Kanishka Rs. 25,000 (Rs. 20,000 + Rs. 5,000).

### *Illustration 9*

Mohit and Rohan share profits and losses in the ratio of 2:1. They admit Rahul as partner with 1/4 share in profits with a guarantee that his share of profit shall be at least Rs. 50,000. The net profit of the firm for the year ending March 31, 2015 was Rs. 1,60,000. Prepare Profit and Loss Appropriation Account.

### *Solution*

**Profit and Loss Appropriation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Mohit's capital | | | Net profit | 1,60,000 |
| (share of profit) | 80,000 | | | |
| *Less:* Share in deficiency | 6,667 | 73,333 | | |
| Rohan's capital | | | | |
| (share of profit) | 40,000 | | | |
| *Less:* Share in deficiency | 3,333 | 36,667 | | |
| Rahul's capital | | | | |
| (share of profit) | 40,000 | | | |
| *Add:* Deficiency received from: | | | | |
| Mohit | 6,667 | | | |
| Rohan | 3,333 | 50,000 | | |
| | | **1,60,000** | | **1,60,000** |

*Working Notes:*

The new profit sharing ratio after admission of Rahul comes to 2:1:1. As per this ratio the share of partners in the profit comes to:

Mohit = Rs. 1,60,000 × $\frac{2}{4}$ = Rs. 80,000

Rohan = Rs. 1,60,000 × $\frac{1}{4}$ = Rs. 40,000

Rahul = Rs. 1,60,000 × $\frac{1}{4}$ = Rs. 40,000

But, since Rahul has been given a guarantee of minimum of Rs. 50,000 as his share of profit. The deficiency of Rs. 10,000 (Rs. 50,000 – Rs. 40,000) shall be borne by Mohit and Rohan in the ratio in which they share profits and losses between themselves, viz. 2:1 as follows:

Mohit's share in deficiency comes to 2/3 × Rs. 10,000 = Rs. 6,667
Rohan's share in deficiency comes to 1/3 × Rs. 10,000 = Rs. 3,333

Thus Mohit will get Rs. 80,000 – Rs. 6,667 = Rs. 73,333, Rohan will get Rs. 40,000–Rs. 3,333 = Rs. 36,667 and Rahul will get Rs. 40,000 + Rs. 6,667 + Rs. 3,333 = Rs. 50,000 in the profit of the firm.

*Calculation of new profit sharing ratio*

The new partner Rahul's share is $\frac{1}{4}$ The remaining profit is $1 - \frac{1}{4} = \frac{3}{4}$, to be shared between Mohit and Rohan in the ratio of 2:1.

Mohit's new share = $\frac{3}{4} \times \frac{2}{3} = \frac{2}{4}$

Rohan's new share = $\frac{3}{4} \times \frac{1}{3} = \frac{1}{4}$

Thus, New profit sharing ratio comes to be $\frac{2}{4} : \frac{1}{4} : \frac{1}{4}$ or 2 : 1 :1.

### *Illustration 10*

John and Mathew share profits and losses in the ratio of 3:2. They admit Mohanty into their firm to 1/6 share in profits. John personally guaranteed that Mohanty's share of profit, after charging interest on capital @ 10 per cent per annum would not be less than Rs. 30,000 in any year. The capital provided was as follows: John Rs. 2,50,000, Mathew Rs. 2,00,000 and Mohanty Rs. 1,50,000. The profit for the year ending March 31,2015 amounted to Rs. 1,50,000 before providing interest on capital. Show the Profit & Loss Appropriation Account if new profit sharing ratio is 3:2:1.

### *Solution*

**Profit and Loss Appropriation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Interest on capital | | | Net profit | 1,50,000 |
| John | 25,000 | | | |
| Mathew | 20,000 | | | |
| Mohanty | 15,000 | 60,000 | | |
| Capital accounts shared info : | | | | |
| John | 45,000 | | | |
| *Less:* Share of deficiency | 15,000 | 30,000 | | |
| Mathew | | 30,000 | | |
| Mohanty | 15,000 | | | |
| *Add:* Deficiency received from John | 15,000 | 30,000 | | |
| | | **1,50,000** | | **1,50,000** |

*Working Notes:*

Profit after interest on capital is Rs. 90,000, which is to be distributed in the ratio of 3:2:1 as follows: John gets Rs. 45,000 (3/6 × Rs. 90,000), Mathew Rs. 30,000, Mohanty Rs. 15,000. Deficiency of Mohanty from the guaranteed profit of Rs. 15,000 will be borne by John. John will therefore get Rs. 45,000 – Rs. 15,000 = Rs. 30,000, Mathew Rs. 30,000 and Mohanty Rs. 30,000.

### *Illustration 11*

Mahesh and Dinesh share profits and losses in the ratio of 2:1. From January 01, 2014 they admit Rakesh into their firm who is to be given a share of 1/10 of the profits with a guaranteed minimum of Rs. 25,000. Mahesh and Dinesh continue to share profits as before but agree to bear any deficiency on account of guarantee to Rakesh in the ratio of 3:2 respectively. The profits of the firm for the year ending December 31, 2015 amounted to Rs. 1,20,000. Prepare Profit and Loss Appropriation Account.

**Profit and Loss Appropriation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capital Accounts: (for share of profit) | | | Net profit | 1,20,000 |
| Mahesh 6/10 × 1,20,000 | 72,000 | | | |
| *Less:* Deficiency share | 7,800 | 64,200 | | |
| Dinesh 3/10 × 1,20,000 | 36,000 | | | |
| *Less:* Deficiency share | 5,200 | 30,800 | | |
| Rakesh | 12,000 | | | |
| *Add:* Share of Deficiency from | | | | |
| Mahesh | 7,800 | | | |
| Dinesh | 5,200 | 25,000 | | |
| | | **1,20,000** | | **1,20,000** |

*Working Notes:*

New profit sharing Ratio will be calculated as follows:

Rakesh to share $\frac{1}{10}$ of the profits. The remaining profit $\frac{9}{10}$ will be shared by Mahesh and Dinesh in the ratio of 2:1.

Mahesh's share in profit will be $\frac{2}{3} \times \frac{9}{10} = \frac{3}{10}$

Dinesh's share will be $\frac{1}{3} \times \frac{9}{10} = \frac{3}{10}$

The New ratio becomes $\frac{3}{5} : \frac{3}{10} : \frac{1}{10}$ or 6 : 3 : 1.

Mahesh's share in profit = 1,20,000 × $\frac{6}{10}$ = Rs. 72,000,
Dinesh's share in profit = Rs. 36,000,
Rakesh's share in profit = Rs. 12,000.

Deficiency of Rakesh (Rs. 13,000) will be shared by Mahesh and Dinesh in the ratio of 3:2.
Mahesh will bear 3/5 of 13,000, i.e. Rs. 7,800 and Rakesh, 2/5 of Rs. 13,000, i.e. Rs. 5,200.

Thus, the profits of the firm will be shared as follows.
Mahesh will get Rs. 72,000 – Rs. 7,800 = Rs. 64,200.
Dinesh will get Rs. 36,000 – Rs. 5,200 = Rs. 30,800
Rakesh will get Rs. 12,000 + Rs. 7,800 + Rs. 5,200 = Rs. 25,000.

**Do It Yourself**

Kavita and Lalit are partners sharing profits in the ratio of 2:1. They decide to admit Mohan with share in profits with a guaranteed amount of Rs. 25,000. Both Kavita and Lalita undertake to meet the liability arising out of Guaranteed amount to Mohan in their respective profit sharing ratio. The profit sharing ratio between Kavita and Lalit does not change. The firm earned profits of Rs. 76,000 for the year 2006–07.Show the distribution of profit amongst the partners.

## 2.7 Past Adjustments

Sometimes a few omissions or errors in the recording of transactions or the preparation of summary statements are found after the final accounts have been prepared and the profits distributed among the partners. The omission may be in respect of interest on capitals, interest on drawings, interest on partners' loan, partner's salary, partner's commission or outstanding expenses. There may also be some changes in the provisions of partnership deed or system of accounting having impact with retrospective effect. All these acts of omission and commission need adjustments for correction of their impact. Instead of altering old accounts, necessary adjustments can be made either; (a) through 'Profit and Loss Adjustment Account', or (b) directly in the capital accounts of the concerned partners. This is explained with the help of following example.

Rameez and Zaheer are equal partners. Their capitals as on April 01, 2015 were Rs. 50,000 and Rs. 1,00,000 respectively. After the accounts for the financial year ending March 31, 2016 have been prepared, it is discovered that interest at the rate of 6 per cent per annum, as provided in the partnership deed has not been credited to the partners' capital accounts before distribution of profit. In this case, the interest on capital not credited to the partners' capital accounts works out to be Rs. 3000 (6/100 × Rs. 50,000) for Rameez and Rs. 6,000 (6/100 × Rs. 1,00,000) for Zaheer. Had the interest on capital been duly provided, the firm's profit would have reduced by Rs. 9,000. By this omission, the whole amount of profit as per Profit and Loss Account (without adjustment of Rs. 9,000) has been distributed among the partners in their profit sharing ratio, and the amounts of interest on capital have not been credited to their capital accounts. This error can be rectified in any of the following ways;

*(a) Through Profit and Loss Adjustment Account*

| | | | | |
|---|---|---|---|---|
| (i) | Profit and Loss Adjustment A/c | Dr. | 9,000 | |
| | To Rameez's capital A/c | | | 3,000 |
| | To Zaheer's capital A/c | | | 6,000 |
| | (Interest on capital) | | | |

| | | | | |
|---|---|---|---|---|
| (ii) | Rameez's capital A/c | Dr. | 4,500 | |
| | Zaheer's capital A/c | Dr. | 4,500 | |
| | To Profit and Loss Adjustment A/c | | | 9,000 |
| | (Loss on adjustment) | | | |

*(b) Directly in Partners' Capital Accounts*

For direct adjustment in partners' capital accounts first a statement to ascertain the net effect of omission on partners' capital accounts will be worked out as follows and then the adjustment entries can be recorded.

**Statement Showing Net Effect of Omitting Interest on Capital**

| *Details* | *Rameez (Rs.)* | *Zaheer (Rs.)* |
|---|---|---|
| (i) Amount which should have been credited as interest on capital | 3,000 | 6,000 |
| (ii) Amount actually credited by way of share of profit (Rs. 9,000 divided equally)— | 4,500 | 4,500 |
| (iii) Difference between (i) and (ii) (Net effect) | **Dr. 1,500 (Excess)** | **Cr. 1,500 (Short)** |

The statement shows that Rameez has got excess credit of Rs. 1,500 while Zaheer's account has been credited less by Rs. 1,500. In order to rectify the error Rameez's capital account should be debited and that of Zaheer, credited with Rs. 1,500 by passing the following journal entry;
journal entry.

| | | | |
|---|---|---|---|
| Rameez's Capital A/c | Dr. | 1,500 | |
| To Zaheer's Capital A/c | | | 1,500 |
| (Adjustment for omission of interest on capital) | | | |

***Illustration 12***

Nusrat, Sonu and Himesh are partners sharing profits and losses in the ratio of 5 : 3 : 2. The partnership deed provides for charging interest on drawing's @ 10% p.a. The drawings of Nusrat, Sonu and Himesh during the year ending December 2015 amounted to Rs. 20,000, Rs. 15,000 and Rs. 10,000 respectively. After the final accounts have been prepared, it was discovered that interest on drawings has not been taken into consideration. Give necessary adjusting journal entry.

**Statement showing Net Effect of Omitting Interest on Drawings**

| *Particulars* | *Nusrat (Rs.)* | *Sonu (Rs.)* | *Himesh (Rs.)* | *Total* |
|---|---|---|---|---|
| Amount which should have been debited by way of interest on drawings | 2,000 | 1,500 | 1,000 | 4,500 |
| Amount that should have been credited by way of share of profit | 2,250 | 1,350 | 900 | 4,500 |
| **Required Adjustment** | **Cr. 250 (Short)** | **Cr. 150 (Excess)** | **Cr.100 (Excess)** | |

Journal Entry for adjustment of interest on drawings would be:

| | | | |
|---|---|---|---|
| Sonu's Capital A/c | Dr. | 150 | |
| Himesh's Capital A/c | Dr. | 100 | |
| To Nusrat's Capital A/c | | | 250 |
| (Adjustment for omission of interest on drawings) | | | |

**Do it Yourself**

1. Gupta and Sarin are partners in a firm sharing profits in the ratio of 3:2. Their fixed capitals are: Gupta 2,00,000, and Sarin 3,00,000. After the accounts for the year are prepared it is discovered that interest on capital @10% p.a. as provided in the partnership agreement, has not been credited in the capital accounts of partners before distribution of profits. Record adjustment entry to rectify the error.
2. Krishna, Sandeep and Karim are partners sharing profits in the ratio of 3:2:1. Their fixed capitals are: Krishan Rs. 1,20,000, Sandeep 90,000 and Karim 60,000. For the year 2014-15, interest was credited to them @ 6% p.a. instead of 5% p.a. Record adjustment entry.
3. Leela, Meera and Neha are partners and have omitted interest on capital @9% p.a. for three years ended March 31, 2013. Their fixed capitals on which interest was to be allowed throughout were: Leela Rs. 80,000, Meera Rs. 60,000 and Neha Rs. 1,00,000. Their profit sharing ratio during the last three years were:

| *Year* | *Leela* | *Meera* | *Neha* |
|---|---|---|---|
| 2015-16 | 2 | 2 | 2 |
| 2014-15 | 4 | 5 | 1 |
| 2013-14 | 1 | 2 | 2 |

Record adjustment entry.

## 2.8 Final Accounts

The final accounts of a partnership firm are prepared in the same way as those prepared for a sole trading concern with just one difference which relates to the distribution of profit among the partners. After preparing the Trading and Profit and Loss Account, the net profit or net loss is transferred to an account called Profit and Loss Appropriation Account as discussed earlier in this chapter. As you know, all adjustments in respect of interest on capital, interest on drawings, partner's salary, partners' share of profit and loss, interest on partner's loan, etc. are made through the Profit and Loss Appropriation Account. This is done in order to distinguish between the results of operations of business and the distribution of the profit among the owners. The preparation of final accounts and the Profit & Loss Appropriation Account is clarified with the help of Illustration 13.

***Illustration 13***

Kapil and Vineet were partners sharing profits and losses in the ratio of 3:2. The following balances were extracted from the books of account for the year ended March 31, 2017.

| | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|
| Capitals | | |
| Kapil | — | 60,000 |
| Vineet | — | 50,000 |
| Current accounts (on April 01, 2013) | | 2,800 |
| Kapil | — | |
| Vineet | — | 1,600 |
| Drawings: | | — |
| Kapil | 12,000 | — |
| Vineet | 8,000 | — |
| Stock as on 1.4.2016 | 11,000 | |
| Purchases and Sales | 54,000 | 80,000 |
| Returns | 2,000 | 1,500 |
| Wages | 2,500 | — |
| Salaries | 4,000 | — |
| Printing and Stationery | 500 | — |
| Bills receivables | 12,000 | — |
| Bills payables | — | 2,000 |
| Debtors and Creditors | 36,000 | 8,000 |
| Discounts | 1,200 | 1,500 |
| Rent and Rates | 800 | — |
| Bad debts | 1,400 | — |
| Insurance | 400 | — |
| Postage and Telegrams | 300 | — |
| Salesman's commission | 3,400 | — |
| Land and Building | 24,000 | — |
| Plant and Machinery | 20,000 | — |
| Furniture | 13,500 | — |
| Overdraft | — | 2,000 |
| Trade expenses | 400 | — |
| Cash in hand | 500 | — |
| Cash at bank | 1,500 | — |
| | **2,09,400** | **2,09,400** |

Prepare the final accounts for the year ended March 31, 2017 firm taking into consideration the following:

(a) Stock on March 31, 2017 was Rs. 18,000;
(b) Provision for doubtful debts is to be provided at 5% on debtors;
(c) Outstanding salaries were Rs. 1,000;
(d) Goods worth Rs. 8,000 were destroyed by fire on December 10, 2016. The Insurance Company agreed to pay Rs. 7,000 in full settlement of the claim;
(e) Interest on capitals is allowed at 6% per annum and interest on drawings is also charged at 6% per annum;
(f) Kapil is entitled to a Salary of Rs. 1,200 per annum;
(g) Write-off Land and buildings at 5%, Furniture at 10% and Plant and Machinery at 15%.

***Solution***

**Trading and Profit & Loss Account for the year ending March 31, 2017**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Opening stock | | 11,000 | Sales | 80,000 | |
| Purchases | 54,000 | | *Less:* Returns | 2,000 | 78,000 |
| *Less:* Returns | 1,500 | 52,500 | Closing stock | | 18,000 |
| Wages | | 2,500 | Goods destroyed by fire | | 8,000 |
| Gross Profit c/d | | 38,000 | | | |
| | | **1,04,000** | | | **1,04,000** |
| Salaries | 4,000 | | Gross Profit b/d | | 38,000 |
| *Add:* Outstanding | 1,000 | 5,000 | Discount received | | 1,500 |
| Printing and Stationery | | 500 | | | |
| Rent and Rates | | 800 | | | |
| Insurance | | 400 | | | |
| Discount allowed | | 1,200 | | | |
| Trade expenses | | 400 | | | |
| Postage and Telegrams | | 300 | | | |
| Bad debts | 1,400 | | | | |
| *Add:* Provision | 1,800 | 3,200 | | | |
| Salesman's commission | | 3,400 | | | |
| Loss due to fire (Rs. 8000–Rs. 7000) | | 1,000 | | | |
| *Depreciation:* | | | | | |
| Land and Buildings | 1,200 | | | | |
| Furniture | 1,350 | | | | |
| Plant and Machinery | 3,000 | 5,550 | | | |
| Net Profit transferred to Profit and Loss Appropriation | | 17,750 | | | |
| | | **39,500** | | | **39,500** |

**Profit and Loss Appropriation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Interest on capital: | | | Profit and Loss | | 17,750 |
| Kapil | 3,600 | | Interest on drawings: | | |
| Vineet | 3,000 | 6,600 | (for 6 months) | | |
| Salary to Kapil | | 1,200 | Kapil | 360 | |
| Net profit (transferred to capital accounts) | | | Vineet | 240 | 600 |
| Kapil | 6,330 | | | | |
| Vineet | 4,220 | 10,550 | | | |
| | | **18,350** | | | **18,350** |

**Partner's Current Accounts**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Kapil (Rs.)* | *Vineet (Rs.)* | *Date* | *Particulars* | *J.F.* | *Kapil (Rs.)* | *Vineet (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Drawings | | 12,000 | 8,000 | | Balance b/d | | 2,800 | 1,600 |
| | Interest on drawings | | 360 | 240 | | Interest on capital | | 3,600 | 3,000 |
| | Balance c/d | | 1,570 | 580 | | Salary | | 1,200 | — |
| | | | | | | Share of profit | | 6,330 | 4,220 |
| | | | **13,930** | **8,820** | | | | **13,930** | **8,820** |
| | | | | | | Balance c/d | | 1,570 | 580 |

**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Overdraft | | 2,000 | Land and Building | 24,000 | |
| Bill payables | | 2,000 | *Less:* Depreciation | 1,200 | 22,800 |
| Creditors | | 8,000 | Plant and Machinery | 20,000 | |
| Outstanding salaries | | 1,000 | *Less:* Depreciation | 3,000 | 17,000 |
| Capital: | | | Furniture | 13,500 | |
| Kapil | 60,000 | | *Less:* Depreciation | 1,350 | 12,150 |
| Vineet | 50,000 | 1,10,000 | Stock | | 18,000 |
| Current Accounts | | | Debtors | 36,000 | |
| Kapil | 1,570 | | *Less:* Provision for | 1,800 | 34,200 |
| Vineet | 580 | 2,150 | discount on debtors | | |
| | | | Insurance company | | 7,000 |
| | | | Bill receivables | | 12,000 |
| | | | Cash at bank | | 1,500 |
| | | | Cash in hand | | 500 |
| | | **1,25,150** | | | **1,25,150** |

### ***Terms Introduced in the Chapter***

- Partnership
- Partnership Firm
- Partnership Deed
- Fixed Capital Account
- Fluctuating Capital Account
- Profit and Loss Adjustment Account
- Interest on Capital
- Interest on Drawings
- Average Period
- Profit and Loss Appropriation Account
- Partner's Current Account

### ***Summary***

1. *Definition of partnership and its essential features:* Partnership is defined as "Relation between persons who have agreed to share the profits of a business carried on by all or any one of them acting for all". The essential features of partnership are : (i) To form a partnership, there must be at least two persons; (ii) It is created by an agreement; (iii) The agreement should be for carrying on some legal business; (iv) sharing of profits and losses; and (v) relationship of mutual agency among the partners.

2. *Meaning and contents of partnership deed:* A document which contains the terms of partnership as agreed among the partners is called 'Partnership Deed'. It usually contains information about all aspects affecting relationship between partners, including objective of business, contribution of capital by each partner, ratio in which profit and losses will be shared by the partners, entitlement of partners to interest on capital, interest on loan and the rules to be followed in case of admission, retirement, death, dissolution, etc.

3. *Provisions of Partnership Act 1932 applicable to accounting:* If partnership deed is silent in respect of certain aspects, the relevant provisions of the Indian Partnership Act, 1932 become applicable. According to the Partnership Act, the partners share profits equally, no partner is entitled to remuneration, no interest on capital is allowed and no interest on drawings is charged. However, if any partner has given some loan to the firm, he is entitled to interest on such amount @ 6% per annum.

4. *Preparation of capital accounts under fixed and fluctuating capital methods:* All transactions relating to partners are recorded in their respective capital accounts in the books of the firm. There can be two methods of maintaining Capital Accounts. These are; (i) fluctuating capital method, (ii) fixed capital method. Under fluctuating capital method, all the transactions relating to a partner are directly recorded in the capital account. Under fixed capital method, however the amount of capital remains fixed, the transactions like interest on capital, drawings, interest on drawings, salary, commission, share of profit or loss are recorded in a separate account called 'Partner's Current Account'.

5. *Distribution of profit and loss:* The distribution of profits among the partners is shown through a Profit and Loss Appropriation Account, which is merely an extension of the Profit and Loss Account. It is usually debited with interest on capital and salary/commission allowed to the partners, and credited with net profit as per Profit and Loss Account and the interest on drawings. The balance being profit or loss is distributed among the partners in the profit sharing ratio and transferred to their respective capital accounts.
6. *Treatment of guarantee of minimum profit to a partner:* Sometimes, a partner may be guaranteed a minimum amount by way of his share in profits. If, in any year, the share of profits as calculated according to his profit sharing ratio is less than the guaranteed amount, the deficiency is made good by the guaranteeing partners' in the agreed ratio which usually is the profit sharing ratio. If, however, such guarantee has been given by any of them, he or they alone shall bear the amount of deficiency.
7. *Treatment of past adjustments:* If, after the final accounts have been prepared, some omission or commissions are noticed say in respect of the interest on capital, interest on drawings, partner's salary, commission, etc. necessary adjustments can be made in the partner's capital accounts through the Profit and Loss Adjustment Account, to rectify the same.
8. *Preparation of final accounts of a partnership firm:* There is not much difference in the final accounts of a sole proprietary concern and that of a partnership firm except that in case of a partnership firm an additional account called Profit and Loss Appropriation Account is prepared to show distribution of profit and loss among the partners.

## Questions for Practice

### Short Answer Questions

1. Define Partnership Deed.
2. Why it is considered desirable to make the partnership agreement in writing.
3. List the items which may be debited or credited in capital accounts of the partners when:
   (i) Capitals are fixed.
   (ii) Capital are fluctuating.
4. Why is Profit and Loss Adjustment Account prepared? Explain.
5. Give two circumstances under which the fixed capitals of partners may change.
6. If a fixed amount is withdrawn on the first day of every quarter, for what period the interest on total amount withdrawn will be calculated?

7. In the absence of Partnership deed, specify the rules relating to the following :
   (i) Sharing of profits and losses.
   (ii) Interest on partner's capital.
   (iii) Interest on Partner's drawings.
   (iv) Interest on Partner's loan
   (v) Salary to a partner.

**Long Answer Questions**

1. What is partnership? What are its chief characteristics? Explain.
2. Discuss the main provisions of the Indian Partnership Act 1932 that are relevant to partnership accounts if there is no partnership deed.
3. Explain why it is considered better to make a partnership agreement in writing.
4. Illustrate how interest on drawings will be calculated under various situations.
5. How will you deal with a change in profit sharing ratio among existing partners? Take imaginary figures to illustrate your answer?

## *Numerical Questions*

*Fixed and Fluctuating Capitals*

1. Triphati and Chauhan are partners in a firm sharing profits and losses in the ratio of 3:2. Their capitals were Rs.60,000 and Rs.40,000 as on January 01, 2015. During the year they earned a profit of Rs. 30,000. According to the partnership deed both the partners are entitled to Rs. 1,000 per month as salary and 5% interest on their capital. They are also to be charged an interest of 5% on their drawings, irrespective of the period, which is Rs. 12,000 for Tripathi, Rs. 8,000 for Chauhan. Prepare Partner's Accounts when, capitals are fixed.

   (**Ans :** Tripathi's Current account Balance Rs. 3,600,Chauhan's Current account Balance Rs.6,400)

2. Anubha and Kajal are partners of a firm sharing profits and losses in the ratio of 2:1. Their capital, were Rs.90,000 and Rs.60,000. The profit during the year were Rs. 45,000. According to partnership deed, both partners are allowed salary, Rs. 700 per month to Anubha and Rs. 500 per month to Kajal. Interest allowed on capital @ 5%p.a. The drawings at the end of the period were Rs. 8,500 for Anubha and Rs. 6,500 for Kajal. Interest is to be charged @ 5% p.a. on drawings. Prepare partners capital accounts, assuming that the capital account are fluctuating.
   (**Ans :** Anubha's Capital Account Balance Rs.1,09,075, Kajal's Capital Account Balance Rs.70,175)

*Distribution of Profits*

3. Harshad and Dhiman are in partnership since April 01, 2016. No Partnership agreement was made. They contributed Rs. 4,00,000 and 1,00,000 respectively as capital. In addition, Harshad advanced an amount of Rs. 1,00,000 to the firm, on October 01, 2016. Due to long illness, Harshad could not participate in business activities from August 1, to September 30, 2016. The profits for the year ended March 31, 2017 amounted to Rs. 1,80,000.
   Dispute has arisen between Harshad and Dhiman.

   *Harshad Claims:*
   (i) he should be given interest @ 10% per annum on capital and loan;
   (ii) Profit should be distributed in proportion of capital;

   *Dhiman Claims:*
   (i) Profits should be distributed equally;
   (ii) He should be allowed Rs. 2,000 p.m. as remuneration for the period he managed the business, in the absence of Harshad;
   (iii) Interest on Capital and loan should be allowed @ 6% p.a.

   You are required to settle the dispute between Harshad and Dhiman. Also prepare Profit and Loss Appropriation Account.

   (**Ans :** Harshad's share in profit Rs. 88,500, Dhiman's share in profit Rs. 88,500)

4. Aakriti and Bindu entered into partnership for making garment on April 01, 2016 without any Partnership agreement. They introduced Capitals of Rs. 5,00,000 and Rs. 3,00,000 respectively on October 01, 2016. Aakriti Advanced. Rs, 20,000 by way of loan to the firm without any agreement as to interest. Profit and Loss account for the year ended March 31 2017 showed profit of Rs, 43,000. Partners could not agree upon the question of interest and the basis of division of profit. You are required to divide the profits between them giving reason for your solution.

   (**Ans :** Profit shares equal Aakriti and Bindu Rs. 21,200)

5. Rakhi and Shikha are partners in a firm, with capitals of Rs. 2,00,000 and Rs, 3,00,000 respectively. The profit of the firm, for the year ended 2016-17 is Rs. 23,200. As per the Partnership agreement, they share the profit in their capital ratio, after allowing a salary of Rs. 5,000 per month to Shikha and interest on Partner's capital at the rate of 10% p.a. During the year Rakhi withdrew Rs. 7,000 and Shikha Rs. 10,000 for their personal use. As per partnership deed, salary and interest are caption treated as charged. You are required to prepare Profit and Loss Account and Partner's Capital Accounts.

   (**Ans :** Loss Transferred to Rakhi Capital Rs.34,720 and Shikha Capital Rs.52,080)

6. Lokesh and Azad are partners sharing profits in the ratio 3:2, with capitals of Rs. 50,000 and 30,000, respectively. Interest on capital is agreed to be paid

@ 6% p.a. Azad is allowed a salary of Rs. 2,500 p.a. During 2016, the profits prior to the calculation of interest on capital but after charging Azad's salary amounted to Rs. 12,500. A provision of 5% of profits is to be made in respect of manager's commission. Prepare accounts showing the allocation of profits and partner's capital accounts.

(**Ans :** Profit transferred to Lokesh's Capital Rs. 4,170 and Azad's Capital Rs.2,780)

7. The partnership agreement between Maneesh and Girish provides that:
   (i) Profits will be shared equally;
   (ii) Maneesh will be allowed a salary of Rs. 400 p.m;
   (iii) Girish who manages the sales department will be allowed a commission equal to 10% of the net profits, after allowing Maneesh's salary;
   (iv) 7% interest will be allowed on partner's fixed capital;
   (v) 5% interest will be charged on partner's annual drawings;
   (vi) The fixed capitals of Maneesh and Girish are Rs. 1,00,000 and Rs. 80,000, respectively. Their annual drawings were Rs. 16,000 and 14,000, respectively. The net profit for the year ending March 31, 2015 amounted to Rs. 40,000;
   Prepare firm's Profit and Loss Appropriation Account.

   (**Ans :** Profit transferred to the Capital accounts of Maneesh and Girish each, Rs.10,290)

8. Ram, Raj and George are partners sharing profits in the ratio 5 : 3 : 2. According to the partnership agreement George is to get a minimum amount of Rs. 10,000 as his share of profits every year. The net profit for the year 2013 amounted to Rs, 40,000. Prepare the Profit and Loss Appropriation Account.

   (**Ans :** Profit transferred to Ram's Capital Rs.18,750 Raj's Capital Rs.11,250 and George's Capital Rs.10,000)

9. Amann, Babita and Suresh are partners in a firm. Their profit sharing ratio is 2:2:1. Suresh is guaranteed a minimum amount of Rs. 10,000 as share of profit, every year. Any deficiency on that account shall be met by Babita. The profits for two years ending March 31, 2016 and March 31, 2017 were Rs. 40,000 and Rs. 60,000, respectively. Prepare the Profit and Loss Appropriation Account for the two years.

   (**Ans :** For the year 2016, Profits transferred to Amann's Capital, Rs.16,000; Babita's Capital Rs.14,000; Suresh's capital Rs.10,000 and for the year 2017, Profit transferred to Amann's Capital Rs.24,000, Babita's Capital Rs.24,000, Suresh's capital, Rs.12,000)

10. Simmi and Sonu are partners in a firm, sharing profits and losses in the ratio of 3:1. The profit and loss account of the firm for the year ending March 31, 2017 shows a net profit of Rs. 1,50,000. Prepare the Profit and Loss Appropriation Account by taking into consideration the following information:
    (i) Partners capital on April 1, 2016;
    Simmi, Rs. 30,000; Sonu, Rs. 60,000;

(ii) Current accounts balances on April 1, 2016;
Simmi, Rs. 30,000 (cr.); Sonu, Rs. 15,000 (cr.);
(iii) Partners drawings during the year amounted to
Simmi, Rs. 20,000; Sonu, Rs. 15,000;
(iv) Interest on capital was allowed @ 5% p.a.;
(v) Interest on drawing was to be charged @ 6% p.a. at an average of six months;
(vi) Partners' salaries : Simmi Rs. 12,000 and Sonu Rs. 9,000. Also show the partners' current accounts.

(**Ans :** Profit transferred to Simmi's Capital, Rs. 94,162 and Sonu's Capital, Rs. 31,388)

11. Ramesh and Suresh were partners in a firm sharing profits in the ratio of their capitals contributed on commencement of business which were Rs. 80,000 and Rs. 60,000 respectively. The firm started business on April 1, 2016. According to the partnership agreement, interest on capital and drawings are 12% and 10% p.a., respectively. Ramesh and Suresh are to get a monthly salary of Rs. 2,000 and Rs. 3,000, respectively.

The profits for year ended March 31, 2017 before making above appropriations was Rs. 1,00,300. The drawings of Ramesh and Suresh were Rs. 40,000 and Rs. 50,000, respectively. Interest on drawings amounted to Rs. 2,000 for Ramesh and Rs. 2,500 for Suresh. Prepare Profit and Loss Appropriation Account and partners' capital accounts, assuming that their capitals are fluctuating.

(**Ans :** Profit transferred to Ramesh's Capital Rs.16,000 and Suresh's Capital, Rs.12,000)

12. Sukesh and Vanita were partners in a firm. Their partnership agreement provides that:
(i) Profits would be shared by Sukesh and Vanita in the ratio of 3:2;
(ii) 5% interest is to be allowed on capital;
(iii) Vanita should be paid a monthly salary of Rs. 600.
The following balances are extracted from the books of the firm, on March 31, 2017.

| | *Sukesh (Rs.)* | *Vanita (Rs.)* |
|---|---|---|
| Capital Accounts | 40,000 | 40,000 |
| Current Accounts | (Cr.) 7,200 | (Cr.) 2,800 |
| Drawings | 10,850 | 8,150 |

Net profit for the year, before charging interest on capital and after charging partner's salary was Rs. 9,500. Prepare the Profit and Loss Appropriation Account and the Partner's Current Accounts.

(**Ans :** Profit transferred to Sukesh's Capital, Rs.3,300 and Vanita's Capital, Rs. 2,200)

*Calculation of Interest on Capital and Interest on Drawings*

13. Rahul, Rohit and Karan started partnership business on April 1, 2016 with capitals of Rs. 20,00,000, Rs. 18,00,000 and Rs. 16,00,000, respectively. The profit for the year ended March 2017 amounted to Rs.1,35,000 and the partner's drawings had been Rahul Rs. 50,000, Rohit Rs. 50,000 and Karan Rs. 40,000. The profits are distributed among partner's in the ratio of 3:2:1. Calculate the interest on capital @ 5% p.a.

    (**Ans :** Rahul, Rs. 1,00,000, Rohit, Rs. 90,000, Karan Rs. 80,000)

14. Sunflower and Pink Rose started partnership business on April 01, 2016 with capitals of Rs. 2,50,000 and Rs.1,50,000, respectively. On October 01, 2016, they decided that their capitals should be Rs. 2,00,000 each. The necessary adjustments in the capitals are made by introducing or withdrawing cash. Interest on capital is to be allowed @ 10% p.a. Calculate interest on capital as on March 31, 2017.

    (**Ans :** Total interest on Sunflower's Capital Rs. 22,500 and on Pink Rose's Capital, Rs. 17,500)

15. On March 31, 2017 after the close of accounts, the capitals of Mountain, Hill and Rock stood in the books of the firm at Rs. 4,00,000,Rs.3,00,000 and Rs. 2,00,000, respectively. Subsequently, it was discovered that the interest on capital @ 10% p.a. had been omitted. The profit for the year amounted to Rs. 1,50,000 and the partner's drawings had been Mountain: Rs. 20,000, Hill Rs. 15,000 and Rock Rs. 10,000.
    Calculate interest on capital.

    (**Ans :** Interest on Capital: Mountain, Rs.37,000; Hill, Rs.26,500; Rock, Rs.16,000)

16. Following is the extract of the Balance Sheet of, Neelkant and Mahdev as on March 31, 2017:

**Balance Sheet as at March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Neelkant's Capital | 10,00,000 | Sundry Assets | 30,00,000 |
| Mahadev's Capital | 10,00,000 | | |
| Neelkant's Current Account | 1,00,000 | | |
| Mahadev's Current Account | 1,00,000 | | |
| Profit and Loss Apprpriation (March 2017) | 8,00,000 | | |
| | **30,00,000** | | **30,00,000** |

During the year Mahadev's drawings were Rs. 30,000. Profits during 2016-17 is Rs. 10,00,000. Calculate interest on capital @ 5% p.a for the year ending March 31, 2017.

(**Ans :** Interest on Neelkant's Capital, Rs. 50,000 and Mahadev's Capital, Rs. 50,000)

17. Rishi is a partner in a firm. He withdrew the following amounts during the year ended March 31, 2017.

| | |
|---|---|
| May 01, 2017 | Rs. 12,000 |
| July 31, 2017 | Rs. 6,000 |
| September 30, 2017 | Rs. 9,000 |
| November 30, 2017 | Rs. 12,000 |
| January 01, 2018 | Rs. 8,000 |
| March 31, 2018 | Rs. 7,000 |

Interest on drawings is charged @ 9% p.a.
Calculate interest on drawings

(**Ans :** Interest on Drawing Rs. 2,295)

18. The capital accounts of Moli and Golu showed balances of Rs.40,000 and Rs. 20,000 as on April 01, 2016. They shared profits in the ratio of 3:2. They allowed interest on capital @ 10% p.a. and interest on drawings, @ 12 p.a. Golu advanced a loan of Rs. 10,000 to the firm on August 01, 2016.
During the year, Moli withdrew Rs. 1,000 per month at the beginning of every month whereas Golu withdrew Rs. 1,000 per month at the end of every month. Profit for the year, before the above mentioned adjustments was Rs.20,950. Calculate interest on drawings show distribution of profits and prepare partner's capital accounts.

(**Ans :** Interest on Drawings : Moli, Rs. 780; Golu, Rs. 660; Profits Moli, Rs. 9,594; Golu, Rs. 6,396)

19. Rakesh and Roshan are partners, sharing profits in the ratio of 3:2 with capitals of Rs. 40,000 and Rs. 30,000, respectively. They withdrew from the firm the following amounts, for their personal use:

| *Rakesh* | *Month* | *Rs.* |
|---|---|---|
| | May 31, 2016 | 600 |
| | June 30, 2016 | 500 |
| | August 31, 2016 | 1,000 |
| | November 1, 2016 | 400 |
| | December 31, 2016 | 1,500 |
| | January 31, 2017 | 300 |
| | March 01, 2017 | 700 |
| *Rohan* | *At the beginning of each month* | *400* |

Interest is to be charged @ 6% p.a. Calculate interest on drawings, assuming that book of accounts are closed on March 31, 2017, every year.

(**Ans :** Interest on Rakesh's Drawings : Rs. 126.50; Rohan's Drawings Rs. 156 rounded off to nearest rupee)

20. Himanshu withdrews Rs. 2,500 at the end Month of each month. The Partnership deed provides for charging the interest on drawings @ 12% p.a. Calculate interest on Himanshu's drawings for the year ending 31st December, 2017.

(**Ans :** Interest on Drawings Rs.1,650)

21. Bharam is a partner in a firm. He withdraws Rs. 3,000 at the starting of each month for 12 months. The books of the firm closes on March 31 every year. Calculate interest on drawings if the rate of interest is 10% p.a.

    (**Ans :** Interest on Drawings, Rs.1,950)

22. Raj and Neeraj are partners in a firm. Their capitals as on April 01, 2017 were Rs. 2,50,000 and Rs. 1,50,000, respectively. They share profits equally. On July 01, 2017, they decided that their capitals should be Rs. 1,00,000 each. The necessary adjustment in the capitals were made by introducing or withdrawing cash by the partners'. Interest on capital is allowed @ 8% p.a. Compute interest on capital for both the partners for the year ending on March 31, 2018.

    (**Ans :** Raj Rs. 11,000 and Neeraj's Rs. 9,000)

23. Amit and Bhola are partners in a firm. They share profits in the ratio of 3:2. As per their partnership agreement, interest on drawings is to be charged @ 10% p.a. Their drawings during 2017 were Rs. 24,000 and Rs. 16,000, respectively. Calculate interest on drawings based on the assumption that the amounts were withdrawn evenly, throughout the year.

    (**Ans :** Interest on Amit's Drawings, Rs. 1,200 and Bhola's, Rs.800)

24. Harish is a partner in a firm. He withdrew the following amounts during the year 2017 :

| | *Rs.* |
|---|---|
| February 01 | 4,000 |
| May 01 | 10,000 |
| June 30 | 4,000 |
| October 31 | 12,000 |
| December 31 | 4,000 |

Interest on drawings is to be charged @ $7\frac{1}{2}$% p.a.
Calculate the amount of interest to be charged on Harish's drawings for the year ending December 31, 2017.

(**Ans :** Interest on Drawings, Rs.1,075)

25. Menon and Thomas are partners in a firm. They share profits equally. Their monthly drawings are Rs. 2,000 each. Interest on drawings is to be charged @ 10% p.a. Calculate interest on Menon's drawings for the year 2006, assuming that money is withdrawn: (i) in the beginning of every month, (ii) in the middle of every month, and (iii) at the end of every month.

    (**Ans :** (i) Interest on Drawings, Rs.1,300; (ii) Rs.1,200; (iii) Rs.1,100)

26. On March 31, 2017, after the close of books of accounts, the capital accounts of Ram, Shyam and Mohan showed balance of Rs. 24,000 Rs. 18,000 and Rs. 12,000, respectively. It was later discovered that interest on capital @ 5% had been omitted. The profit for the year ended March 31, 2017, amounted to Rs. 36,000 and the partner's drawings had been Ram, Rs. 3,600; Shyam, Rs. 4,500 and Mohan, Rs. 2,700. The profit sharing ratio of Ram, Shyam and Mohan was 3:2:1. Calculate interest on capital.

    (**Ans :** Interest on Ram's Capital Rs.480; Shyam's Capital, Rs.525 and Mohan's Capital, Rs.435)

*Guarantee of Profit to the Partners*

27. Amit, Sumit and Samiksha are in partnership sharing profits in the ratio of 3:2:1. Samiksha' share in profit has been guaranteed by Amit and Sumit to be a minimum sum of Rs. 8,000. Profits for the year ended March 31, 2017 was Rs. 36,000. Divide profit among the partners.

    (**Ans :** Profit to Amit Rs. 16,800; Sumit, Rs. 11,200; Samiksha, Rs. 8,000)

28. Pinki, Deepati and Kaku are partner's sharing profits in the ratio of 5:4:1. Kaku is given a guarantee that his share of profits in any given year would not be less than Rs. 5,000. Deficiency, if any, would be borne by Pinki and Deepti equally. Profits for the year amounted to Rs. 40,000. Record necessary journal entries in the books of the firm showing the distribution of profit.

    (**Ans :** Deficiency borne by Pinki and Deepti Rs.500 each)

29. Abhay, Siddharth and Kusum are partners in a firm, sharing profits in the ratio of 5:3:2. Kusum is guaranteed a minimum amount of Rs. 10,000 as per share in the profits. Any deficiency arising on that account shall be met by Siddharth. Profits for the years ending March 31, 2016 and 2017 are Rs. 40,000 and 60,000 respectively. Prepare Profit and Loss Appropriation Account.

    (**Ans :** year 2015 - Abhay Rs. 20,000, Siddharth Rs. 10,000, Kusum Rs. 10,000; year 2016- Abhay Rs. 30,000, Siddharth Rs. 18,000, Kusum Rs. 12,000)

30. Radha, Mary and Fatima are partners sharing profits in the ratio of 5:4:1. Fatima is given a guarantee that her share of profit, in any year will not be less than Rs. 5,000. The profits for the year ending March 31, 2017 amounts to Rs. 35,000. Shortfall if any, in the profits guaranteed to Fatima is to be borne by Radha and Mary in the ratio of 3:2. Record necessary journal entry to show distributioin of profit among partner.

    (**Ans :** Deficiency borne by Radha, Rs. 900 and Mary, Rs. 600)

31. X, Y and Z are in Partnership, sharing profits and losses in the ratio of 3 : 2 : 1, respectively. Z's share in the profit is guaranteed by X and Y to be a minimum of Rs. 8,000. The net profit for the year ended March 31, 2017 was Rs. 30,000. Prepare Profit and Loss Appropriation Account, indicating the amount finally due to each partner.

    (**Ans :** Profit to X Rs.13,200; Y Rs.8,800; Z Rs.8,000)

32. Arun, Boby and Chintu are partners in a firm sharing profit in the ratio or 2:2:1. According to the terms of the partnership agreement, Chintu has to get a minimum of Rs. 60,000, irrespective of the profits of the firm. Any Deficiency to Chintu on Account of such guarantee shall be borne by Arun. Prepare the profit and loss appropriation account showing distribution of profits among partners in case the profits for year 2015 are: (i) Rs. 2,50,000; (ii) 3,60,000.

    (**Ans :** (i) Profit to Arun Rs.90,000, Boby Rs.1,00,000 and Chintu Rs.60,000 (ii) Profit to Arun Rs.1,44,000, Boby Rs.1,44,000 and Chintu Rs.72,000)

33. Ashok, Brijesh and Cheena are partners sharing profits and losses in the ratio of 2 : 2 : 1. Ashok and Brijesh have guaranteed that Cheena share in any year shall be less than Rs. 20,000. The net profit for the year ended March 31, 2017 amounted to Rs. 70,000. Prepare Profit and Loss Appropriation Account.

    (**Ans :** Profit to Ashok Rs.25,000, Brijesh Rs. 25,000 and Cheena Rs. 20,000)

34. Ram, Mohan and Sohan are partners with capitals of Rs. 5,00,000, Rs. 2,50,000 and 2,00,000 respectively. After providing interest on capital @ 10% p.a. the profits are divisible as follows:

    Ram $\frac{1}{2}$, Mohan $\frac{1}{3}$ and Sohan $\frac{1}{6}$. But Ram and Mohan have guaranteed that Sohan's share in the profit shall not be less than Rs. 25,000, in any year. The net profit for the year ended March 31, 2017 is Rs. 2,00,000, before charging interest on capital.

    You are required to show distribution of profit.

    (**Ans :** Profit to Ram, Rs. 48,000, Mohan, Rs. 32,000 and Sohan, Rs. 25,000)

35. Amit, Babita and Sona form a partnership firm, sharing profits in the ratio of 3 : 2 : 1, subject to the following :
    (i) Sona's share in the profits, guaranteed to be not less than Rs. 15,000 in any year.
    (ii) Babita gives guarantee to the effect that gross fee earned by her for the firm shall be equal to her average gross fee of the proceeding five years, when she was carrying on profession alone (which is Rs. 25,000). The net profit for the year ended March 31, 2017 is Rs. 75,000. The gross fee earned by Babita for the firm was Rs. 16,000.

    You are required to show Profit and Loss Appropriation Account (after giving effect to the alone).

    (**Ans :** Profit transferred to Capital Accounts of; Amit, Rs. 41,400, Babita, Rs.27,600 and Sona, Rs.15,000)

*Past Adjustment*

36. The net profit of X, Y and Z for the year ended March 31, 2016 was Rs. 60,000 and the same was distributed among them in their agreed ratio of 3 : 1 : 1. It was subsequently discovered that the under mentioned transactions were not recorded in the books :
    (i) Interest on Capital @ 5% p.a.
    (ii) Interest on drawings amounting to X Rs. 700, Y Rs. 500 and Z Rs. 300.
    (iii) Partner's Salary : X Rs. 1000, Y Rs. 1500 p.a.

    The capital accounts of partners were fixed as : X Rs. 1,00,000, Y Rs. 80,000 and Z Rs. 60,000. Record the adjustment entry.

    (**Ans :** X Dr. Rs.2,500 , Y credit Rs.2,400 and Z credit Rs.100]

37. The firm of Harry, Porter and Ali, who have been sharing profits in the ratio of 2 : 2 : 1, have existed for same years. Ali wants that he should get equal share in the profits with Harry and Porter and he further wishes that the change in

the profit sharing ratio should come into effect retrospectively were for the last three year. Harry and Porter have agreement on this account.
The profits for the last three years were:

| | *(Rs.)* |
|---|---|
| 2014-15 | 22,000 |
| 2015-16 | 24,000 |
| 2016-17 | 29,000 |

Show adjustment of profits by means of a single adjustment journal entry.

(**Ans :** Harry (Dr.) Rs.5,000, Porter (Dr.) Rs.5,000 and Ali (Cr.) Rs.10,000)

38. Mannu and Shristhi are partners in a firm sharing profit in the ratio of 3 : 2. Following is the balance sheet of the firm as on March 31, 2017.

**Balance Sheet as at March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Mannu's Capital | 30,000 | | Drawings : | | |
| Shristhi's Capital | 10,000 | 40,000 | Mannu | 4,000 | |
| | | | Shristhi | 2,000 | 6,000 |
| | | | Other Assets | | 34,000 |
| | | **40,000** | | | **40,000** |

Profit for the year ended March 31, 2017 was Rs. 5,000 which was divided in the agreed ratio, but interest @ 5% p.a. on capital and @ 6% p.a. on drawings was inadvertently enquired. Adjust interest on drawings on an average basis for 6 months. Give the adjustment entry.
(**Ans :** Mannu (Cr.) Rs.288 and Shrishti (Dr.) Rs.288)

39. On March 31, 2017 the balance in the capital accounts of Eluin, Monu and Ahmed, after making adjustments for profits, drawing, etc; were Rs. 80,000, Rs. 60,000 and Rs. 40,000 respectively. Subsequently, it was discovered that interest on capital and interest on drawings had been omitted.

    The partners were entitled to interest on capital @ 5% p.a. The drawings during the year were Eluin Rs. 20,000; Monu, Rs. 15,000 and Ahmed, Rs. 9,000. Interest on drawings chargeable to partners were Eluin Rs, 500, Monu Rs. 360 and Ahmed Rs. 200. The net profit during the year amounted to Rs. 1,20,000. The profit sharing ratio was 3 : 2 : 1. Record necessary adjustment entries.

    (**Ans :** Eluin (Dr.) Rs.570, Monu (Cr.) Rs.10 and Ahmed (Cr.) Rs.560)

40. Azad and Benny are equal partners. Their capitals are Rs. 40,000 and Rs. 80,000, respectively. After the accounts for the year have been prepared it is discovered that interest at 5% p.a. as provided in the partnership agreement, has not been credited to the capital accounts before distribution of profits. It is decided to make an adjustment entry at the beginning of the next year. Record the necessary journal entry.

    (**Ans :** Azad (Dr.)1,000 and Benny (Cr.)1,000)

41. Kavita and Pradeep are partners, sharing profits in the ratio of 3 : 2. They employed Chandan as their manager, to whom they paid a salary of Rs. 750 p.m. Chandan deposited Rs. 20,000 on which interest is payable @ 9% p.a. At the end of 2017 (after the division of profit), it was decided that Chandan should be treated as partner w.e.f. Jan. 1, 2014 with $1/6$th share in profits. His deposit being considered as capital carrying interest @ 6% p.a. like capital of other partners. Firm's profits after allowing interest on capital were as follows:

| | | *(Rs.)* |
|---|---|---|
| 2014 | Profit | 59,000 |
| 2015 | Profit | 62,000 |
| 2016 | Loss | (4,000) |
| 2017 | Profit | 78,000 |

Record the necessary journal entries to give effect to the above.

(**Ans :** Kavita (Dr.) 300, Pradeep (Dr.) 200 and Chandan (Cr.) 500)

42. Mohan, Vijay and Anil are partners, the balance on their capital accounts being Rs. 30,000, Rs. 25,000 and Rs. 20,000 respectively. In arriving at these figures, the profits for the year ended March 31, 2017 amounting to Rupees 24,000 had been credited to partners in the proportion in which they shared profits. During the tear their drawings for Mohan, Vijay and Anil were Rs. 5,000, Rs. 4,000 and Rs. 3,000, respectively. Subsequently, the following omissions were noticed:

(a) Interest on Capital, at the rate of 10% p.a., was not charged.

(b) Interest on Drawings: Mohan Rs. 250, Vijay Rs. 200, Anil Rs. 150 was not recorded in the books.

Record necessary corrections through journal entries.

(**Ans :** Debit Anil's Capital Account by Rs. 550 and Credit Mohan's Capital Account by Rs. 550)

43. Anju, Manju and Mamta are partners whose fixed capitals were Rs. 10,000, Rs. 8,000 and Rs. 6,000, respectively. As per the partnership agreement, there is a provision for allowing interest on capitals @ 5% p.a. but entries for the same have not been made for the last three years. The profit sharing ratio during there years remained as follows:

| Year | Anju | Manju | Mamta |
|---|---|---|---|
| 2014 | 4 | 3 | 5 |
| 2015 | 3 | 2 | 1 |
| 2016 | 1 | 1 | 1 |

Make necessary and adjustment entry at the beginning of the fourth year i.e. Jan. 2015.

(**Ans :** Mamta (Dr.) Rs. 200, Anju (Cr.) Rs. 100 and manju (Cr.) Rs. 100)

44. Dinker and Ravinder were partners sharing profits and losses in the ratio of 2:1. The following balances were extracted from the books of account, for the year ended December 31, 2017.

| *Account Name* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|
| Capital | | |
| Dinker | | 2,35,000 |
| Ravinder | | 1,63,000 |
| Drawings | | |
| Dinker | 6,000 | |
| Ravinder | 5,000 | |
| Opening Stock | 35,100 | |
| Purchases and Sales | 2,85,000 | 3,75,800 |
| Carriage inward | 2,200 | |
| Returns | 3,000 | 2,200 |
| Stationerry | 1,200 | |
| Wages | 12,500 | |
| Bills receivables and Bills payables | 45,000 | 32,000 |
| Discount | 900 | 400 |
| Salaries | 12,000 | |
| Rent and Taxes | 18,000 | |
| Insurance premium | 2,400 | |
| Postage | 300 | |
| Sundry expenses | 1,100 | |
| Commission | | 3,200 |
| Debtors and creditors | 95,000 | 40,000 |
| Building | 1,20,000 | |
| Plant and machinery | 80,000 | |
| Investments | 1,00,000 | |
| Furniture and Fixture | 26,000 | |
| Bad Debts | 2,000 | |
| Bad debts provision | | 4,600 |
| Loan | | 35,000 |
| Legal Expenses | 200 | |
| Audit fee | 1,800 | |
| Cash in hand | 13,500 | |
| Cash at Bank | 23,000 | |
| | **8,91,200** | **8,91,200** |

Prepare final accounts for the year ended December 31,2017, with following adjustment:

(a) Stock on December 31,2017, was Rs. 42,500.
(b) A Provision is to be made for bad debts at 5% on debtors.
(c) Rent outstanding was Rs.1,600.
(d) Wages outstanding were Rs.1,200.
(e) Interest on capital to be allowed on capital @ 4% per annum and interest on drawings to be charged @ 6% per annum.
(f) Dinker and Ravinder are entitled to a Salary of Rs.2,000 per annum
(g) Ravinder is entitled to a commission Rs.1,500.

(h) Depreciation is to be charged on Building @ 4%, Plant and Machinery, 6%, and furniture and fixture, 5%.

(i) Outstanding interest on loan amounted to Rs. 350.

(**Ans :** Gross Profit Rs. 81,500, Net Profit Rs.32,200, Dinker 's Capital Rs. 2,47,627 Ravinder's Capital Rs.1,71,573, Total of Balance Sheet Rs. 5,29,350)

45. Kajol and Sunny were partners sharing profits and losses in the ratio of 3:2. The following Balances were extracted from the books of account for the year ended March 31, 2015.

| *Account Name* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|
| Capital | | |
| Kajol | | 1,15,000 |
| Sunny | | 91,000 |
| Current accounts [on 1-04-2005] | | |
| Kajol | | 4,500 |
| Sunny | 3,200 | |
| Drawings | | |
| Kajol | 6,000 | |
| Sunny | 3,000 | |
| Opening stock | 22,700 | |
| Purchases and Sales | 1,65,000 | 2,35,800 |
| Freight inward | 1,200 | |
| Returns | 2,000 | 3,200 |
| Printing and Stationery | 900 | |
| Wages | 5,500 | |
| Bills receivables and Bills payables | 25,000 | 21,000 |
| Discount | 400 | 800 |
| Salaries | 6,000 | |
| Rent | 7,200 | |
| Insurance premium | 2,000 | |
| Traveling expenses | 700 | |
| Sundry expenses | 1,100 | |
| Commission | | 1,600 |
| Debtors and Creditors | 74,000 | 78,000 |
| Building | 85,000 | |
| Plant and Machinery | 70,000 | |
| Motor car | 60,000 | |
| Furniture and Fixtures | 15,000 | |
| Bad debts | 1,500 | |
| Provision for doubtful debts | | 2,200 |
| Loan | | 25,000 |
| Legal expenses | 300 | |
| Audit fee | 900 | |
| Cash in hand | 7,500 | |
| Cash at bank | 12,000 | |
| | **5,78,100** | **5,78,100** |

Prepare final accounts for the year ended March 31,2017, with following adjustments:

(a) Stock on March 31,2015 was Rs.37,500.
(b) Bad debts Rs.3,000; Provision for bad debts is to be made at 5% on debtors.
(c) Rent Prepaid were Rs.1,200.
(d) Wages outstanding were Rs.2,200.
(e) Interest on capital to be allowed on capital at 6% per annum and interest on drawings to be charged @ 5% per annum.
(f) Kajol is entitled to a Salary of Rs. 1,500 per annum.
(g) Prepaid insurance was Rs. 500.
(h) Depreciation was charged on Building, @ 4%; Plant and Machinery, @ 5%; Motor car, @ 10% and furniture and fixture, @ 5%.
(i) Goods worth Rs.7,000 were destroyed by fire on January 20, 2015. The Insurance company agreed to pay Rs.5,000 in full settlement of the claim.

(**Ans :** Gross Profits Rs. 84,900; Net Profit, Rs. 48,000; Kajol's Current account, Rs. 27,369; Sunny's Current Account, Rs. 12,931; Total of Balance Sheet, Rs. 3,72,500)

## *Check-list to Test your Understanding*

*Test your Understanding – I*

1. (i) Invalid (ii) Invalid (iii) Valid (iv) Invalid
2. (i) True (ii) True (iii) True (iv) False (v) False (vi) False

*Test your Understanding – II*

1. (i) Interest on loan given 6% p.a.
   (ii) No interest allowed on capital and charged on drawings
   (iii) Salary and Commission not given to partner
   (iv) Profit to the shared equally
2. Profit : Reena, Rs. 33,750; Raman, Rs. 33,750

*Test your Understanding – III*

1. Interest on capital; Rani, Rs. 9,600; Suman, Rs. 7,200
2. (a) Profit : Priya, Rs. 78,750; Kajal, Rs. 47,250
   (b) Profit NIL. Interest on capital: Priya, Rs. 54.000; Kajal, Rs. 72,000

# Reconstitution of a Partnership Firm – Admission of a Partner

# 3

**Learning Objectives**

*After studying this chapter you will be able to:*

- *Explain the concept of reconstitution of a partnership firm;*
- *Identify the matters that need adjustments in the books of firm when a new partner is admitted;*
- *Determine the new profit sharing ratio and calculate the sacrificing ratio;*
- *Define goodwill and enumerate the factors that affect it;*
- *Explain the methods of valuation of goodwill;*
- *Describe how goodwill will be treated under different situations when a new partner is admitted;*
- *Make necessary adjustments for revaluation of assets and reassessment of liabilities;*
- *Make necessary adjustments for accumulated profits and losses;*
- *Determine the capital of each partner, if required according to the new profit sharing ratio and make necessary adjustments;*
- *Make necessary adjustments on change in the profit sharing ratio among the existing partners.*

Partnership is an agreement between two or more persons (called partners) for sharing the profits of a business carried on by all or any of them acting for all. Any change in the existing agreement amounts to reconstitution of the partnership firm. This results in an end of the existing agreement and a new agreement comes into being with a changed relationship among the members of the partnership firm and/or their composition. However, the firm continues. The partners often resort to reconstitution of the firm in various ways such as admission of a new partner, change in profit sharing ratio, retirement of a partner, death or insolvence of a partner. In this chapter we shall have a brief idea about all these and in detail about the accounting implications of admission of a new partner or an on change in the profit sharing ratio.

## 3.1 Modes of Reconstitution of a Partnership Firm

*Reconstitution of a partnership firm usually takes place in any of the following ways:*

*Admission of a new partner:* A new partner may be admitted when the firm needs additional capital or managerial help. According to the provisions of Partnership Act 1932 unless it is otherwise provided in the partnership deed a new partner can be admitted only when the existing partners unanimously agree for it. For example, Hari and Haqque are partners sharing profits in the ratio of

3:2. On April 1, 2017 they admitted John as a new partner with 1/6 share in profits of the firm. With this change now there are three partners of the firm and it stand reconstituted.

*Change in the profit sharing ratio among the existing partners:* Sometimes the partners of a firm may decide to change their existing profit sharing ratio. This may happen an account of a change in the existing partners' role in the firm. For example, Ram, Mohan and Sohan are partners in a firm sharing profits in the ratio of 3:2:1. With effect from April 1,2017 they decided to share profits equally as Sohan brings in additional capital. This results in a change in the existing agreement leading to reconstitution of the firm.

*Retirement of an existing partner:* It means withdrawal by a partner from the business of the firm which may be due to his bad health, old age or change in business interests. In fact a partner can retire any time if the partnership is at will. For example, Roy, Ravi and Rao are partners in the firm sharing profits in the ratio of 2:2:1. On account of illness, Ravi retired from the firm on March 31, 2017. This results in reconstitution of the firm now having only two partners.

*Death of a partner:* Partnership may also stand reconstituted on death of a partner, if the remaining partners decide to continue the business of the firm as usual. For example, X,Y and Z are partners in a firm sharing profits in the ratio 3:2:1. X died on March 31, 2017. Y and Z decide to carry on the business sharing future profits equally. The continuity of business by Y and Z sharing future profits equally leads to reconstitution of the firm.

## 3.2 Admission of a New Partner

When firm requires additional capital or managerial help or both for the expansion of its business a new partner may be admitted to supplement its existing resources. According to the Partnership Act 1932, a new partner can be admitted into the firm only with the consent of all the existing partners unless otherwise agreed upon. With the admission of a new partner, the partnership firm is reconstituted and a new agreement is entered into to carry on the business of the firm.

A newly admitted partner acquires two main rights in the firm–

1. Right to share the assets of the partnership firm; and
2. Right to share the profits of the partnership firm.

For the right to acquire share in the assets and profits of the partnership firm, the partner brings an agreed amount of capital either in cash or in kind. Moreover, in the case of an established firm which may be earning more profits than the normal rate of return on its capital the new partner is required to contribute some additional amount known as premium or goodwill. This is done primarily to compensate the existing partners for loss of their share in super profits of the firm.

Following are the other important points which require attention at the time of admission of a new partner:

1. New profit sharing ratio;
2. Sacrificing ratio;
3. Valuation and adjustment of goodwill;
4. Revaluation of assets and Reassessment of liabilities;
5. Distribution of accumulated profits (reserves); and
6. Adjustment of partners' capitals.

### 3.3 New Profit Sharing Ratio

When new partner is admitted he acquires his share in profits from the old partners. In other words, on the admission of a new partner, the old partners sacrifice a share of their profit in favour of the new partner. But, what will be the share of new partner and how he will acquire it from the existing partners is decided mutually among the old partners and the new partner. However, if nothing is specified as to how does the new partner acquire his share from the old partners; it may be assumed that he gets it from them in their profit sharing ratio. In any case, on admission of a new partner, the profit sharing ratio among the old partners will change keeping in view their respective contribution to the profit sharing ratio of the incoming partner. Hence, there is a need to ascertain the new profit sharing ratio among all the partners. This depends upon how does the new partner acquires his share from the old partners for which there are many possibilities. Let us understand it with the help of the following illustrations.

***Illustration 1***

Anil and Vishal are partners sharing profits in the ratio of 3:2. They admitted Sumit as a new partner for 1/5 share in the future profits of the firm. Calculate new profit sharing ratio of Anil, Vishal and Sumit.

***Solution***

Sumit's share $= \frac{1}{5}$

Remaining share $= 1 - \frac{1}{5} = \frac{4}{5}$

Anil's new share $= \frac{3}{5}$ of $\frac{4}{5} = \frac{12}{25}$

Vishal's new share $= \frac{2}{5}$ of $\frac{4}{5} = \frac{8}{25}$

New profit sharing ratio of Anil, Vishal and Sumit will be 12:8:5.

*Note:* It has been assumed that the new partner acquired his share from old partners in old ratio.

***Illustration 2***

Akshay and Bharati are partners sharing profits in the ratio of 3:2. They admit Dinesh as a new partner for 1/5th share in the future profits of the firm which he gets equally from Akshay and Bharati. Calculate new profit sharing ratio of Akshay, Bharati and Dinesh.

***Solution***

Dinesh's share = $\frac{1}{5}$ or $\frac{2}{10}$

Akshay's share = $\frac{3}{5} - \frac{1}{10} = \frac{5}{10}$

Bharati's share = $\frac{2}{5} - \frac{1}{10} = \frac{3}{10}$

New profit sharing ratio between Akshay, Bharati and Dinesh will be 5:3:2.

***Illustration 3***

Anshu and Nitu are partners sharing profits in the ratio of 3:2. They admitted Jyoti as a new partner for 3/10 share which she acquired 2/10 from Anshu and 1/10 from Nitu. Calculate the new profit sharing ratio of Anshu, Nitu and Jyoti.

***Solution***

Jyoti's share = $\frac{3}{10}$

Anshu's new share = $\frac{3}{5} - \frac{2}{10} = \frac{4}{10}$

Nitu's new share = Old share – Share Surrendered

= $\frac{2}{5} - \frac{1}{10} = \frac{3}{10}$

The new profit sharing ratio between Anshu, Nitu and Jyoti will be 4 : 3 : 3.

***Illustration 4***

Ram and Shyam are partners in a firm sharing profits in the ratio of 3:2. They admit Ghanshyam as a new partner. Ram surrenders 1/4 of his share and Shyam 1/3 of his share in favour of Ghanshyam. Calculate new profit sharing ratio of Ram, Shyam and Ghanshyam.

***Solution***

Ram's old share $= \frac{3}{5}$

Share surrendered by Ram $= \frac{1}{4}$ of $\frac{3}{5} = \frac{3}{20}$

Ram's new share $= \frac{3}{5} - \frac{3}{20} = \frac{9}{20}$

Shyam's old share $= \frac{2}{5}$

Share surrendered by Shyam $= \frac{1}{3}$ of $\frac{2}{5} = \frac{2}{15}$

Shyam's new share $= \frac{2}{5} - \frac{2}{15} = \frac{4}{15}$

Ghanshyam's new share = Ram's sacrifice + Shyam's Sacrifice

$= \frac{3}{20} + \frac{2}{15} = \frac{17}{60}$

New profit sharing ratio among Ram, Shyam and Ghanshyam will be 27:16:17

***Illustration 5***

Das and Sinha are partners in a firm sharing profits in 4:1 ratio. They admitted Pal as a new partner for 1/4 share in the profits, which he acquired wholly from Das. Determine the new profit sharing ratio of the partners.

***Solution***

Pal's share $= \frac{1}{4}$

Das's new share = Old Share – Share Surrendered

$= \frac{4}{5} - \frac{1}{4} = \frac{11}{20}$

Sinha's new share $= \frac{1}{5}$

The new profit sharing ratio among Das, Sinha and Pal will be 11:4:5.

## 3.4 Sacrificing Ratio

The ratio in which the old partners agree to sacrifice their share of profit in favour of the incoming partner is called sacrificing ratio. The sacrifice by a partner is equal to :

**Old Share of Profit – New Share of Profit**

As stated earlier, the new partner is required to compensate the old partner's for their loss of share in the super profits of the firm for which he brings in an additional amount known as premium or goodwill. This amount is shared by the existing partners in the ratio in which they forego their shares in favour of the new partner which is called sacrificing ratio.

The ratio is normally clearly given as agreed among the partners which could be the old ratio, equal sacrifice, or a specified ratio. The difficulty arises where the ratio in which the new partner acquires his share from the old partners is not specified. Instead, the new profit sharing ratio is given. In such a situation, the sacrificing ratio is to be worked out by deducting each partner's new share from his old share. Look at the illustrations 6 to 8 and see how sacrificing ratio is calculated in such a situation.

### *Illustration 6*

Rohit and Mohit are partners in a firm sharing profits in the ratio of 5:3. They admit Bijoy as a new partner for 1/7 share in the profit. The new profit sharing ratio will be 4:2:1. Calculate the sacrificing ratio of Rohit and Mohit.

### *Solution*

Rohit's old share $= \frac{5}{8}$

Rohit's new share $= \frac{4}{7}$

Rohit's sacrifice $= \frac{5}{8} - \frac{4}{7} = \frac{3}{56}$

Mohit's old share $= \frac{3}{8}$

Mohit's new share $= \frac{2}{7}$

Mohit's sacrifice $= \frac{3}{8} - \frac{2}{7} = \frac{5}{56}$

Sacrificing ratio among Rohit and Mohit will be 3:5.

### *Illustration 7*

Amar and Bahadur are partners in a firm sharing profits in the ratio of 3:2. They admitted Mary as a new partner for 1/4 share. The new profit sharing ratio between Amar and Bahadur will be 2:1. Calculate their sacrificing ratio.

***Solution***

Marry's share $= \frac{1}{4}$

Remaining share $= 1-\frac{1}{4} = \frac{3}{4}$

This 3/4 share is to be shared by Amar and Bahadur in the ratio of 2:1.
Therefore,

Amar's new share $= \frac{2}{3}$ of $\frac{3}{4} = \frac{6}{12}$ or $\frac{2}{4}$

Bahadur's new share $= \frac{1}{3}$ of $\frac{3}{4} = \frac{3}{12}$ or $\frac{1}{4}$

New profit sharing ratio of Amar, Bahadur and Mary will be 2:1:1.

Amar's sacrifice $= \frac{3}{5}-\frac{2}{4}=\frac{2}{20}$

Bahadur's sacrifice $= \frac{2}{5}-\frac{1}{4}=\frac{3}{20}$

Sacrificing ratio among Amar and Bahadur will be 2:3.

***Illustration 8***

Ramesh and Suresh are partners in a firm sharing profits in the ratio of 4:3. They admitted Mohan as a new partner. The profit sharing ratio of Ramesh, Suresh and Mohan will be 2:3:1. Calculate the gain or sacrifice of old partner.

***Solution***

Ramesh's old share $= \frac{4}{7}$

Ramesh's new share $= \frac{2}{6}$

Ramesh's sacrifice $= \frac{4}{7}-\frac{2}{6}=\frac{10}{42}$

Suresh's new share $= \frac{3}{6}$

Suresh's old share $= \frac{3}{7}$

Suresh's gain $= \frac{3}{6}-\frac{3}{7}=\frac{3}{42}$

Mohan's share $= \frac{1}{6}$ or $\frac{7}{42}$

Ramesh's sacrifice = Suresh's gain+Mohan's gain

$$= \frac{3}{42} + \frac{7}{42} = \frac{10}{42}$$

In this case, the whole sacrifice is by Ramesh.

**Test your Understanding - I**

1. A and B are partners sharing profits in the ratio of 3:1. They admit C for 1/4 share in the future profits. The new profit sharing ratio will be:

   (a) A $\frac{9}{16}$, B $\frac{3}{16}$, C $\frac{4}{16}$

   (b) A $\frac{8}{16}$, B $\frac{4}{16}$, C $\frac{4}{16}$

   (c) A $\frac{10}{16}$, B $\frac{2}{16}$, C $\frac{4}{16}$

   (d) A $\frac{8}{16}$, B $\frac{9}{16}$, C $\frac{10}{16}$

2. X and Y share profits in the ratio of 3:2. Z was admitted as a partner who sets 1/5 share. New profit sharing ratio, if Z acquires 3/20 from X and 1/20 from Y would be:
   (a) 9 : 7 : 4 (b) 8 : 8 : 4 (c) 6 : 10 : 4 (d) 10 : 6 : 4

3. A and B share profits and losses in the ratio of 3 : 1, C is admitted into partnership for 1/4 share. The sacrificing ratio of A and B is:
   (a) equal (b) 3 : 1 (c) 2 : 1 (d) 3 : 2.

## 3.5 Goodwill

Goodwill is also one of the special aspects of partnership accounts which requires adjustment (also valuation if not specified) at the time of reconstitution of a firm viz., a change in the profit sharing ratio, the admission of a partner or the retirement or death of a partner.

### *3.5.1 Meaning of Goodwill*

Over a period of time, a well-established business develops an advantage of good name, reputation and wide business connections. This helps the business to earn more profits as compared to a newly set up business. In accounting, the monetary value of such advantage is known as "goodwill".

It is regarded as an intangible asset. In other words, goodwill is the value of the reputation of a firm in respect of the profits expected in future over and above the normal profits. It is generally observed that when a person pays for goodwill, he/she pays for something, which places him in the position of being able to earn super profits as compared to the profit earned by other firms in the same industry.

In simple words, goodwill can be defined as "the present value of a firm's anticipated excess earnings" or as "the capitalised value attached to the differential profit capacity of a business". Thus, goodwill exists only when the firm earns super profits. Any firm that earns normal profits or is incurring losses has no goodwill.

### *3.5.2 Factors Affecting the Value of Goodwill*

The main factors affecting the value of goodwill are as follows:

1. *Nature of business:* A firm that produces high value added products or having a stable demand is able to earn more profits and therefore has more goodwill.
2. *Location:* If the business is centrally located or is at a place having heavy customer traffic, the goodwill tends to be high.
3. *Efficiency of management:* A well-managed concern usually enjoys the advantage of high productivity and cost efficiency. This leads to higher profits and so the value of goodwill will also be high.
4. *Market situation:* The monopoly condition or limited competition enables the concern to earn high profits which leads to higher value of goodwill.
5. *Special advantages:* The firm that enjoys special advantages like import licences, low rate and assured supply of electricity, long-term contracts for supply of materials, well-known collaborators, patents, trademarks, etc. enjoy higher value of goodwill.

### *3.5.3 Need for Valuation of Goodwill*

Normally, the need for valuation of goodwill arises at the time of sale of a business. But, in the context of a partnership firm it may also arise in the following circumstances:

1. Change in the profit sharing ratio amongst the existing partners;
2. Admission of new partner;
3. Retirement of a partner;
4. Death of a partner; and
5. Dissolution of a firm involving sale of business as a going concern.
6. Amalgamation of partnership firms.

### *3.5.4 Methods of Valuation of Goodwill*

Since goodwill is an intangible asset it is very difficult to accurately calculate its value. Various methods have been advocated for the valuation of goodwill of a partnership firm. Goodwill calculated by one method may differ from the goodwill calculated by another method. Hence, the method by which goodwill is to be calculated, may be specifically decided between the existing partners and the incoming partner.

The important methods of valuation of goodwill are as follows:

1. Average Profits Method
2. Super Profits Method
3. Capitalisation Method

### *3.5.4.1 Average Profits Method*

Under this method, the goodwill is valued at agreed number of 'years' purchase of the average profits of the past few years. It is based on the assumption that a new business will not be able to earn any profits during the first few years of its operations. Hence, the person who purchases a running business must pay in the form of goodwill a sum which is equal to the profits he is likely to receive for the first few years. The goodwill, therefore, should be calculated by multiplying the past average profits by the number of years during which the anticipated profits are expected to accrue.

For example, if the past average profits of a business works out at Rs. 20,000 and it is expected that such profits are likely to continue for another three years, the value of goodwill will be Rs. 60,000 (Rs. 20,000 × 3),

### *Illustration 9*

The profit for the five years of a firm are as follows – year 2013 Rs. 4,00,000; year 2014 Rs. 3,98,000; year 2015 Rs. 4,50,000; year 2016 Rs. 4,45,000 and year 2017 Rs. 5,00,000. Calculate goodwill of the firm on the basis of 4 years purchase of 5 years average profits.

### *Solution*

| *Year* | *Profit (Rs.)* |
|---|---|
| 2013 | 4,00,000 |
| 2014 | 3,98,000 |
| 2015 | 4,50,000 |
| 2016 | 4,45,000 |
| 2017 | 5,00,000 |
| **Total** | **21,93,000** |

Average Profit $= \dfrac{\text{Total Profit of Last 5 Years}}{\text{No. of years}} = \text{Rs. } \dfrac{21{,}93{,}000}{5} = \text{Rs. } 4{,}38{,}600$

Goodwill = Average Profits × No. of years purchased

= Rs. 4,38,600 × 4 = Rs. 17,54,400

The above calculation of goodwill is based on the assumption that no change in the overall situation of profits is expected in the future.

The above illustration is based on simple average. Sometimes, if there exists an increasing on decreasing trend, it is considered to be better to give a higher weightage to the profits to the recent years than those of the earlier years. Hence, it is a advisable to work out weighted average based on specified weights like 1, 2, 3, 4 for respective year's profit. However, weighted average should be used only if specified. (See illustrations 10 and 11).

***Illustration 10***

The profits of firm for the five years are as follows:

| *Year* | *Profit (Rs.)* |
|---|---|
| 2012–13 | 20,000 |
| 2013–14 | 24,000 |
| 2014–15 | 30,000 |
| 2015–16 | 25,000 |
| 2016–17 | 18,000 |

Calculate the value of goodwill on the basis of three years' purchase of weighted average profits based on weights 1,2,3,4 and 5 respectively.

***Solution***

| *Year Ended 31st March* | *Profit (Rs.)* | *Weight* | *Product* |
|---|---|---|---|
| 2012–13 | 20,000 | 1 | 20,000 |
| 2013–14 | 24,000 | 2 | 48,000 |
| 2014–15 | 30,000 | 3 | 90,000 |
| 2015–16 | 25,000 | 4 | 1,00,000 |
| 2016–17 | 18,000 | 5 | 90,000 |
| | | 15 | 3,48,000 |

Weighted Average Profit = Rs. $\frac{3,48,000}{15}$ = Rs. 23,200

Goodwill = Rs. 23,200 × 3 = Rs. 69,600

### *Illustration 11*

Calculate goodwill of a firm on the basis of three year' purchase of the weighted average profits of the last four years. The profit of the last four years were: 2012 Rs. 20,200; 2013 Rs. 24,800; 2014 Rs. 20,000 and 2015 Rs. 30,000. The weights assigned to each year are : 2012 – 1; 2013 – 2; 2014 – 3 and 2015 – 4.

You are supplied the following information:

1. On September 1, 2014 a major plant repair was undertaken for Rs. 6,000, which was charged to revenue. The said sum is to be capitalised for goodwill calculation subject to adjustment of depreciation of 10% p.a. on reducing balance method.
2. The Closing Stock for the year 2013 was overvalued by Rs. 2,400.
3. To cover management cost an annual charge of Rs. 4,800 should be made for purpose of goodwill valuation.

### *Solution*

| *Calculation of Adjusted Profit* | *2012 Rs.* | *2013 Rs.* | *2014 Rs.* | *2015 Rs.* |
|---|---|---|---|---|
| Given Profits | 20,200 | 24,800 | 20,000 | 30,000 |
| *Less:* Management Cost | 4,800 | 4,800 | 4,800 | 4,800 |
| *Add:* Capital Expenditure | 15,400 | 20,000 | 15,200 | 25,200 |
| Charged to Revenue | - | - | 6,000 | - |
| | 15,400 | 20,000 | 21,200 | 25,200 |
| *Less:* Unprovided Depreciation | - | - | 200 | 580 |
| | 15,400 | 20,000 | 21,000 | 24,620 |
| *Less:* over valuation of Closing Stock | - | 2,400 | - | - |
| | 15,400 | 17,600 | 21,000 | 24,620 |
| *Add:* over value of opening stock | - | - | 2,400 | - |
| **Adjusted Profits** | **15,400** | **17,600** | **23,400** | **24,620** |

Calculation of weighted average profits:

*(Rs.)*

| *Year* | *Profit* | *Weight* | *Product* |
|---|---|---|---|
| 2012 | 15,400 | 1 | 15,400 |
| 2013 | 17,600 | 2 | 35,200 |
| 2014 | 23,400 | 3 | 70,200 |
| 2015 | 24,620 | 4 | 98,480 |
| **Total** | | **10** | **2,19,280** |

Weight Average Profit $= \text{Rs.} \dfrac{2,19,280}{10} = \text{Rs. } 21,928$

Goodwill = Rs. 21,928 × 3 = Rs. 65,784

*Notes to Solution*

(i) Depreciation of 2014 = 10% of Rs. 6000 for 4 months
= Rs. 6000 × 10/100 × 4/12 = Rs. 200

(ii) Depreciation of 2015 = 10% of Rs. 6000 – Rs. 200 for one year
= Rs. 5800 × 10/100 + Rs. 580

(iii) Closing Stock of 2014 will become opening stock for the year 2015.

### *3.5.4.2 Super Profits Method*

The basic assumption in the average profits (simple or weighted) method of calculating goodwill is that if a new business is set up, it will not be able to earn any profits during the first few years of its operations. Hence, the person who purchases an existing business has to pay in the form of goodwill a sum equal to the total profits he is likely to receive for the first 'few years'. But it is contended that the buyer's real benefit does not lie in total profits; it is limited to such amounts of profits which are in excess of the normal return on capital employed in similar business. Therefore, it is desirable to value, goodwill on the basis of the excess profits and not the actual profits. The excess of actual profits over the normal profits is termed as super profits.

$$\text{Normal Profit} = \frac{\text{Capital Employed} \times \text{Normal Rate of Return}}{100}$$

Suppose an existing firm earns Rs. 18,000 on the capital of Rs. 1,50,000 and the normal rate of return is 10%. The Normal profits will work out at Rs. 15,000 (1,50,000 × 10/100). The super profits in this case will be Rs. 3,000 (Rs. 18,000 – 15,000). The goodwill under the super profit method is ascertained by multiplying the super profits by certain number of years' purchase. If, in the above example, it is expected that the benefit of super profits is likely to be available for 5 years in future, the goodwill will be valued at Rs. 15,000 (3,000 × 5). Thus, the steps involved under the method are:

1. Calculate the average profit,
2. Calculate the normal profit on the capital employed on the basis of the normal rate of return,
3. Calculate the super profits by deducting normal profit from the average profits, and
4. Calculate goodwill by multiplying the super profits by the given number of years' purchase.

### Illustration 12

The books of a business showed that the capital employed on December 31, 2015, Rs. 5,00,000 and the profits for the last five years were: 2010–Rs. 40,000: 2012-Rs. 50,000; 2013-Rs. 55,000; 2014-Rs.70,000 and 2015-Rs. 85,000. You are required to find out the value of goodwill based on 3 years purchase of the super profits of the business, given that the normal rate of return is 10%.

### Solution

$$\text{Normal Profits} = \frac{\text{Capital Employed} \times \text{Normal Rate of Return}}{100}$$

$$= \text{Rs. } \frac{5,00,000 \times 10}{100} = \text{Rs. } 50,000$$

*Average Profits:*

| *Year* | *Profit (Rs.)* |
|---|---|
| 2011 | 40,000 |
| 2012 | 50,000 |
| 2013 | 55,000 |
| 2014 | 70,000 |
| 2015 | 85,000 |
| **Total** | **3,00,000** |

Average Profits = Rs. 3,00,000/5 = Rs. 60,000
Super Profit = Rs. 60,000 – Rs. 50,000 = Rs. 10,000
Goodwill = Rs. 10,000 $\times$ 3 = Rs. 30,000

### Illustration 13

The capital of the firm of Anu and Benu is Rs. 1,00,000 and the market rate of interest is 15%. Annual salary to partners is Rs. 6,000 each. The profits for the last 3 years were Rs. 30,000; Rs. 36,000 and Rs. 42,000. Goodwill is to be valued at 2 years purchase of the last 3 years' average super profits. Calculate the goodwill of the firm.

### Solution

Interest on capital $= 1,00,000 \times \frac{15}{100}$ = Rs. 15,000............(i)

*Add:* partner's salary = Rs. 6,000 $\times$ 2 = Rs. 12,000............(ii)

Normal Profit(i+ii) = Rs. 27,000

Average Profit = Rs. 30,000+Rs.36,000+Rs.42,000 = Rs. $\frac{1,08,000}{3}$

= Rs. 36,000

Super Profit = Average Profit–Normal Profit

= Rs. 36,000–Rs. 27,000

= Rs. 9,000

Goodwill = Super Profit × No of years' purchase

= Rs. 9,000 × 2

= Rs. 18,000

*3.5.4.3 Capitalisation Methods*

Under this method the goodwill can be calculated in two ways: (a) by capitalizing the average profits, or (b) by capitalising the super profits.

(a) *Capitalisation of Average Profits:* Under this method, the value of goodwill is ascertained by deducting the actual capital employed (net assets) in the business from the capitalized value of the average profits on the basis of normal rate of return. This involves the following steps:

(i) Ascertain the average profits based on the past few years' performance.

(ii) Capitalize the average profits on the basis of the normal rate of return to ascertain the capitalised value of average profits as follows:

**Average Profits × 100/Normal Rate of Return**

(iii) Ascertain the actual capital employed (net assets) by deducting outside liabilities from the total assets (excluding goodwill).

**Capital Employed = Total Assets (excluding goodwill) – Outside Liabilities**

(iv) Compute the value of goodwill by deducting net assets from the capitalised value of average profits, i.e. (ii) – (iii).

***Illustration 14***

A business has earned average profits of Rs. 1,00,000 during the last few years and the normal rate of return in a similar business is 10%. Ascertain the value of goodwill by capitalisation average profits method, given that the value of net assets of the business is Rs. 8,20,000.

***Solution***

Capitalised Value of Average Profits

Rs. $\frac{1,00,000 \times 100}{10}$ = Rs. 10,00,000

Goodwill = Capitalised value – Net Assets
= Rs. 10,00,000 – Rs. 8,20,000
= Rs.1,80,000

(b) *Capitalisation of Super Profits:* Goodwill can also be ascertained by capitalising the super profit directly. Under this method there is no need to work out the capitalised value of average profits. It involves the following steps.

(i) Calculate capital employed of the firm, which is equal to total assets minus outside liabilities.

(ii) Calculate normal profits on capital employed.

(iii) Calculate average profit for past years, as specified.

(ii) Calculate super profits by deducting normal profits from average profits.

(iii) Multiply the super profits by the required rate of return multiplier, that is,

**Goodwill = Super Profits × 100 Normal Rate of Return**

In other words, goodwill is the capitalised value of super profits. The amount of goodwill worked out by this method will be exactly the same as calculated by capitalising the average profits.

For example, using the data given in illustration 14 where the average profits are Rs. 1,00,000 and the normal profits are Rs. 82,000 (10% of Rs. 8,20,000), the super profits worked out as Rs. 18,000 (Rs. 1,00,000 – Rs. 82,000), the goodwill will be calculated as follows.

$$\text{Rs. } 18{,}000 \times \frac{100}{10} = \text{Rs. } 1{,}80{,}000.$$

### *Illustration 15*

1. The goodwill of a firm is to be worked out at three years' purchase of the average profits of the last five years which are as follows:

| *Years* | *Profits (Loss) (Rs.)* |
|---|---|
| 2012 | 10,000 |
| 2013 | 15,000 |
| 2014 | 4,000 |
| 2015 | (5,000) |
| 2016 | 6,000 |

2. The capital employed of the firm is Rs. 1,00,000 and normal rate of return is 8%, the average profits for last 5 years are Rs. 12,000 and goodwill is to be worked out at 3 years' purchase of super profits,

3. Rama Brothers earn an average profit of Rs. 30,000 with a capital of Rs. 2,00,000. The normal rate of return in the business is 10%. Using capitalisation of super profits method work out the value the goodwill of the firm.

***Solution***

1. Total Profits = Rs. 10,000 + Rs. 15,000 + Rs. 4,000 + Rs. 6,000 – Rs. 5,000
   = Rs. 30,000

   Average Profits = Rs. 30,000/5 = Rs. 6,000

   Goodwill = Average Profits × 3 = Rs. 6,000 × 3 = Rs.18,000

2. Average Profit = Rs. 12,000

   Normal Profit = Rs.1,00,000 $\times \frac{8}{100}$ = Rs. 8,000

   Super Profit=Average Profit – Normal profit = Rs. 12,000 – Rs. 8,000
   = Rs. 4,000

   Goodwill=Super Profit × 3 = Rs. 4,000 × 3 = Rs. 12,000

3. Normal Profit= Rs. 2,00,000 × 10/100 = Rs. 20,000

   Super Profit = Average Profit – Normal Profit = Rs. 30,000 – Rs. 20,000
   = Rs. 10,000

   Goodwill=Super Profit × 100/Normal Rate of Return
   = 10,000 × 100/10 = Rs. 1,00,000.

### *3.5.5 Treatment of Goodwill*

As stated earlier, the incoming partner who acquires his share in the profits of the firm from the existing partners brings in some additional amount to compensate them for loss of their share in super profits. It is termed as his share of goodwill (also called premium). Alternatively he may agree that goodwill account be raised in the books of the firm by giving the necessary credit to the old partners. Thus, when a new partner is admitted, goodwill can be treated in two ways: (1) By Premium Method, and (2) By Revaluation Method.

#### *3.5.5.1 Premium Method*

This method is followed when the new partner pays his share of goodwill in cash. The amount of premium brought in by the new partner is shared by the existing partners in their ratio of sacrifice. If this amount is paid to the old partners directly (privately) by the new partner, no entry is made in the books of the firm. But, when the amount is paid through the firm, which is generally the case, the following journal entries are passed:

| | | | | |
|---|---|---|---|---|
| (i) | Cash A/c<br>To Goodwill A/c<br>(Amount brought by new partner as premium) | Dr. | | |
| (ii) | Goodwill A/c<br>To Existing Partners Capital A/c (Individually)<br>(Goodwill distributed among the existing partners in their sacrificing ratio) | Dr. | | |

Alternatively, it is credited to the new partner's capital account and then adjusted in favour of the existing partners in their sacrificing ratio. In that case the journal entries will be as follows:

| | | | | |
|---|---|---|---|---|
| (i) | Cash A/c<br>To New Partner's Capital A/c<br>(Amount brought by new partner for his share of goodwill) | Dr. | | |
| (ii) | New Partner's Capital A/c<br>To Existing Partner's Capital A/cs (Individually)<br>(Goodwill brought by new partners distributed among the existing partners in their sacrificing ratio) | Dr. | | |

If the partners decide that the amount of premium credited to their capital accounts should be retained in business, there is no need to pass any additional entry. If, however, they decide to withdraw their amounts, (in full or in part) the following additional entry will be passed:

Existing Partner's Capital A/c (Individually) Dr.
To Cash A/c
(The amount of goodwill withdrawn by the existing partners)

***Illustration 16***

Sunil and Dalip are partners in a firm sharing profits and losses in the ratio of 5:3. Sachin is admitted in the firm for 1/5 share of profits. He is to bring in Rs. 20,000 as capital and Rs. 4,000 as his share of goodwill. Give the necessary journal entries,

(a) When the amount of goodwill is retained in the business.
(b) When the amount of goodwill is fully withdrawn.
(c) When 50% of the amount of goodwill is fully withdrawn.

***Solution***

(a) When the amount of goodwill credited to existing partners is retained in business

**Books of Sunil and Dalip**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| (i) | Cash A/c | Dr. | | 24,000 | |
| | To Sachin's Capital A/c | | | | 20,000 |
| | To Goodwill A/c | | | | 4,000 |
| | (The amount brought in by Sachin as Capital and Goodwill) | | | | |
| (ii) | Goodwill A/c | Dr. | | 4,000 | |
| | To Sunil's Capital A/c | | | | 2,500 |
| | To Dalip's Capital A/c | | | | 1,500 |
| | (Goodwill transferred to Sunil and Dalip in the ratio of 5:3) | | | | |

Alternatively, if the goodwill account is not be the brought into the books of accounts the following entries will be recorded:

| | | | | |
|---|---|---|---|---|
| (i) | Cash A/C | Dr. | 24,000 | |
| | To Sachin's Capital A/c | | | 24,000 |
| (ii) | Sachin's Capital A/c | Dr | 4,000 | |
| | To Sunil's Capital A/c | | | 2,500 |
| | To Dalip's Capital A/c | | | 1,500 |

*Note:* It assumed that the sacrificing ratio is the same as old profit sharing ratio.

(b) When the amount of goodwill credited to existing partners is fully withdrawn.

**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| 1. | Same as in (a) above | | | | |
| 2. | Same as in (a) above, | | | | |
| 3. | Sunil's Capital A/c | Dr. | | 2,500 | |
| | Dalip's Capital A/c | Dr. | | 1,500 | |
| | To Cash A/c | | | | 4,000 |
| | (Cash withdrawn by Sunil and Dalip equal to their share of goodwill) | | | | |

(c) When 50% of the amount of goodwill credited to existing partners is withdrawn.

**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| 1. | Same as in (a) above, | | | | |
| 2. | Same as in (a) above | | | | |
| 3. | Sunil's Capital A/c | Dr. | | 1,250 | |
| | Dalip's Capital A/c | Dr. | | 750 | |
| | To Cash A/c | | | | 2,000 |
| | (Cash withdrawn for 50% of their share of goodwill) | | | | |

***Illustration 17***

Vijay and Sanjay are partners in a firm sharing profits and losses in the ratio of 3:2. They decide to admit Ajay into partnership with 1/4 share in profits. Ajay brings in Rs. 30,000 for capital and the requisite amount of premium in cash. The goodwill of the firm is valued at Rs. 20,000. The new profit sharing ratio is 2:1:1. Vijay and Sanjay withdraw their share of goodwill. Give necessary journal entries.

***Solution***

(a) Ajay will bring Rs. 5,000 (1/4 of Rs. 20,000) as his share of goodwill (premium)

(b) Sacrificing Ratio is 2:3 as calculated below:

For Vijay, old ratio is 3/5 and the new ratio is 2/4, hence, his sacrificing ratio is

$$= \frac{3}{5} - \frac{2}{4} = \frac{12 - 10}{20} = \frac{2}{20}$$

For Sanjay, old ratio is 2/5 and the new ratio is 1/4, hence, his sacrificing ratio is $= \frac{2}{5} - \frac{1}{4} = \frac{8-5}{20} = \frac{3}{20}$

**Books of Vijay and Sanjay**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|
| 1. | Cash A/c Dr. | | 35,000 | |
| | To Ajay's Capital A/c | | | 30,000 |
| | To Goodwill A/c | | | 5,000 |
| | (The amount of capital and goodwill brought by Ajay) | | | |
| 2. | Goodwill A/c Dr. | | 5,000 | |
| | To Vijay's Capital A/c | | | 2,000 |
| | To Sanjay's Capital A/c | | | 3,000 |
| | (the amount of goodwill brought by Ajay shared by Vijay and Sanjay in their sacrificing ratio) | | | |
| 3. | Vijay's Capital A/c Dr. | | 2,000 | |
| | Sanjay's Capital A/c Dr. | | 3,000 | |
| | To Cash A/c | | | 5,000 |
| | (Cash withdrawn by Vijay and Sanjay for their share of goodwill) | | | |

*Note:* Alternatively, journal entries (1) and (2) could be as follows:

**Books of Vijay and Sanjay**
**Journal**

| Date | Particulars | L.F. | Debit (Rs.) | Credit (Rs.) |
|---|---|---|---|---|
| 1. | Cash A/c Dr.<br>To Ajay's Capital A/c<br>(Ajay brought in Rs. 30,000 for capital and Rs. 5,000 as goodwill) | | 35,000 | <br>35,000 |
| 2. | Ajay's Capital A/c Dr.<br>To Vijay's Capital A/c<br>To Sanjay's Capital A/c<br>(Amount of goodwill brought in by Ajay shared by Vijay and Sanjay in their sacrificing in the ratio of 2:3) | | 5,000 | <br>2.000<br>3,000 |

*When goodwill already exists in books:* The above treatment of goodwill was based on the assumption that there was no goodwill account in the books of the firm. However, It is quite possible that when a new partner brings in his share of goodwill in cash, some amount of goodwill already exists in books. In that case, after crediting the old partners by the amount of goodwill brought in by the new partner, the existing goodwill must be written off by debiting the old partners in their old profit sharing ratio. But, if it is decided that the goodwill may continue to appear in the books at its old value, the amount to be brought in by new partner will have to be proportionately reduced i.e., He will be required to bring cash only for this share of the excess of the agreed value of goodwill over the amount of goodwill already appearing in books.

For example, in Illustration 17, the goodwill of the firm is valued at Rs. 20,000 and Ajay who is admitted to 1/4 share in its profits, brings in Rs. 5,000 as his share of goodwill. Suppose, goodwill already appeared in books at Rs. 10,000 and there is no decision to retain it. In that case, after crediting Vijay and Sanjay for the amount of goodwill brought in by Ajay, the following additional journal entry shall be recorded for writing off the existing amount of goodwill.

| Date | Particulars | L.F. | Debit (Rs.) | Credit (Rs.) |
|---|---|---|---|---|
| | Vijay's Capital A/c Dr.<br>Sanjay's Capital A/c Dr.<br>To Goodwill A/c<br>(Goodwill written-off in old ratio) | | 6,000<br>4,000 | <br><br>10,000 |

In case, however, the partners decide to maintain the Goodwill Account as it is, the new partner is required to bring in as his share of goodwill only in respect of the difference between its total value and the book value. In other words, Ajay will be required to bring in Rs. 2,500 only [1/4 of Rs. 10,000 (Rs 20,000 – Rs. 10,000)]. Which will be credited to old partners in their sacrificing ratio, and no entry will be recorded for writing off the existing amount of goodwill.

***Illustration 18***

Srikant and Raman are partners in a firm sharing profits and losses in the ratio of 3:2. They decide to admit Venkat into partnership with 1/3 share in the profits. Venkat brings in Rs 30,000 as his capital. He also promises to bring in the necessary amount for his share of goodwill. On the date of admission, the goodwill has been valued at Rs 24,000 and the goodwill account already appears in the books at Rs 12,000. Venkat brings in the necessary amount for his share of goodwill and agrees that the existing goodwill account be written off.

Record the necessary journal entries in the books of the firm.

***Solution***

**Books of Srikant and Raman**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| 1. | Cash A/c | Dr. | | 38,000 | |
| | To Venkat's Capital A/c | | | | 30,000 |
| | To Goodwill A/c | | | | 8,000 |
| | (Amount brought in by Venkat as his capital and his share of goodwill) | | | | |
| 2. | Goodwill A/c | Dr. | | 8,000 | |
| | To Srikant's Capital A/c | | | | 4,800 |
| | To Raman's Capital A/c | | | | 3,200 |
| | (Goodwill brought in by Venkat shared by old partners in their ratio of sacrifice) | | | | |
| 3. | Srikant's Capital A/c | Dr. | | 7,200 | |
| | Raman's Capital A/c | Dr. | | 4,800 | |
| | To Goodwill A/c | | | | 12,000 |
| | (Goodwill already appearing in books written-off in the old ratio) | | | | |

*Note:* Since nothing is given about the ratio in which the new partner acquires his share of profit from Srikant and Raman, it is implied that they sacrifice their share of profit in favour of Venkat in the old ratio i.e., 3:2.

### *3.5.5.2 Revaluation Method*

This method is followed when the new partner does not bring in his share of goodwill in cash. In such a situation, the goodwill account is raised in the books of account by crediting the old partners in the old profit sharing ratio. When goodwill account is to be raised in the books of account there are two possibilities,

(a) No goodwill appears in books at the time of admission, and
(b) Goodwill already exists in books at the time of admission.

*(a) When no goodwill exists in the books:* When no goodwill exists in the books at the time of the admission of a new partner, the goodwill account must be raised at its full value. This can be done by debiting goodwill account with its full value and crediting the old partners' capital accounts in their profit sharing ratio. The journal entry will be:

Goodwill A/c Dr.
To Old Partners' Capitals A/c (individually)
(Goodwill raised at full value in the old ratio)

The goodwill thus raised shall appear in the balance sheet of the firm at its full value.

***Illustration 19***

Ahuja and Barua are partners in a firm sharing profits and losses in the ratio of 3:2. They decide to admit Chaudhary into partnership for 1/5 share of profits, which he acquires equally from Ahuja and Barua. Goodwill is valued at Rs. 30,000. Chaudhary brings in Rs. 16,000 as his capital but is not in a position to bring any amount for goodwill. No goodwill account exists in books of the firm. Goodwill account is to be raised at full value. Record the necessary journal entries.

***Solution***

**Book of Ahuja and Barua**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|
| 1. | Cash A/c Dr.<br>To Chaudhary's Capital A/c<br>(Amount brought for capital) | | 16,000 | <br>16,000 |
| 2. | Goodwill A/c Dr.<br>To Ahuja's Capital A/c<br>To Barua's Capital A/c<br>(Goodwill raised at full value in old ratio) | | 30,000 | <br>18,000<br>12,000 |

*Note:* Goodwill shall appear in the balance sheet at Rs. 30,000

Sometimes, a partner may bring in a part of his share of goodwill. In such a situation, after distributing the amount brought in for goodwill among the old partners in their sacrificing ratio, the goodwill account is raised in the books based on the portion of premium not brought by the new partner. For example, Pooja and Sandeep are partners sharing profits in ratio of 3:3. They admit Tushar as a new partner for $\frac{1}{3}$ share in profits. Tushar is to bring in Rs. 30,000 as his share of goodwill as the total value of goodwill is estimated at Rs. 90,000. But he brings Rs. 15,000 only (half of what is due) on this account. In this case, after due credit for Rs. 15,000 to Pooja's and Sandeep's capital accounts in their sacricifing ratio, goodwill account will be raised by Rs. 45,000 (half of its total value) by crediting their old profit sharing ratio.

*(b) When goodwill already exists in the books :* If the books already show some balance in the Goodwill Account, the adjustment for goodwill in the old partner's capital accounts shall be made only for the difference between the agreed value of goodwill and the amount of goodwill appearing in books.

The amount of goodwill appearing in the books may be less than its agreed value or it may be more than the agreed value. If it is less than the agreed value, the difference between the agreed value of goodwill and the amount of goodwill appearing in the books will be debited to goodwill account and credited to old partner's capital accounts in their old profit sharing ratio. If, however, it is more than the agreed value, the difference will be debited to the old partners' capital accounts in their old profits sharing ratio and credited to the goodwill account. Thus, the journal entries will be as under:

(a) When the value of goodwill appearing in the books is less than the agreed value.

Goodwill A/c Dr.
To Old Partners' Capital A/c (individually)
(Goodwill raised to its agreed value)

(b) When the value of goodwill appearing in the books is more than the agreed value.

Old Partners' Capital A/c (individually) Dr.
To Goodwill A/c
(Goodwill brought down to its agreed value)

***Illustration 20***

Ram and Rahim are partners in a firm sharing profits and losses in the ratio of 3:2. Rahul is admitted into partnership for 1/3 share in profits. He brings in Rs. 10,000 as capital, but is not in a position to bring any amount for his share of goodwill which has been valued at Rs. 30,000. Give necessary journal entries under each of the following situations:

(a) When there is no goodwill appearing in the books of the firm;
(b) When the goodwill appears at Rs 15,000 in the books of the firm; and
(c) When the goodwill appears at Rs. 36,000 in the books of the firm.

***Solution***

*(a) When no goodwill appears in the books*

**Books of Ram and Rahim**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| | Cash A/c | Dr. | | 10,000 | |
| | To Rahul's Capital A/c | | | | 10,000 |
| | (Amount brought by Rahul as Capital) | | | | |
| | Goodwill A/c | Dr. | | 30,000 | |
| | To Ram's Capital A/c | | | | 18,000 |
| | To Rahim's Capital A/c | | | | 12,000 |
| | (Goodwill raised at full value in the old profit sharing ratio) | | | | |

*(b) When goodwill appears in the books at Rs 15,000*

**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| | Cash A/c | Dr. | | 10,000 | |
| | To Rahul's Capital A/c | | | | 10,000 |
| | (Amount brought by Rahul as capital) | | | | |
| | Goodwill | Dr. | | 15,000 | |
| | To Ram's Capital A/c | | | | 9,000 |
| | To Rahim's Capital A/c | | | | 6,000 |
| | (Goodwill raised to its agree value) | | | | |

*(c) When the goodwill appears in the books at Rs 36,000*

**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| | Cash A/c | Dr. | | 10,000 | |
| | To Rahul's Capital | | | | 10,000 |
| | (Amount brought by Rahul as capital) | | | | |
| | Ram's Capital A/c | Dr. | | 3,600 | |
| | Rahim's Capital A/c | Dr. | | 2,400 | |
| | To Goodwill A/c | | | | 6,000 |
| | (Goodwill brought down to its agreed vlaue) | | | | |

Normally, when goodwill is raised in the books of the firm, it will be shown in the balance sheet at its agreed value. If, however, the partners decide that after necessary adjustments have been made in the old partners' capital accounts, the goodwill should not appear in the firm's balance sheet, then it has to be written off. This is done by crediting the goodwill account and debiting the capital accounts of all the partners (including the new partner) in the new profit sharing ratio. The net effect of such treatment will be that the new partner's capital account stands debited to the extent of his share of goodwill and the old partners capital accounts credited in the ratio of their sacrifice, and the goodwill shows nil balance.

### *Illustration 21*

A and B are partners sharing profits and losses equally. They admit C into partnership and the new ratio is fixed as 4:3:2. C is unable to bring anything for goodwill but brings Rs 25,000 as capital. Goodwill of the firm is valued at Rs 18,000. Give the necessary journal entries assuming that the partners do not want goodwill to appear in the Balance Sheet.

### *Solution*

**Books of A and B**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| | Cash A/c | Dr. | | 25,000 | |
| | To C's Capital A/c | | | | 25,000 |
| | (Cash brought in by C as Capital) | | | | |
| | Goodwill | | | 18,000 | |
| | To A's Capital A/c | | | | 9,000 |
| | To B's Capital A/c | | | | 9,000 |
| | (Goodwill raised at its full value) | | | | |
| | A's Capital A/c | Dr. | | 8,000 | |
| | B's Capital A/c | Dr. | | 6,000 | |
| | C's Capital A/c | Dr. | | 4,000 | |
| | To Goodwill A/c | | | | 18,000 |
| | (Goodwill written-off) | | | | |

The net effect of the entries (2) and (3) above is that C's Capital account has been debited by Rs. 4,000 and A's Capital account and B's Capital account credited in their sacrificing ratio by Rs 1,000 (credit Rs 9,000 – debit Rs 8,000) and Rs 3,000 (credit Rs 9,000 – debit Rs 6,000 ) respectively, and goodwill will show nil balance.

Sometimes, the partners may decide not to show goodwill account anywhere in books (not even in the journal and ledger). In that case, for adjustment of goodwill, just one entry can be passed by debiting the new partner's capital account with his share of goodwill and crediting the old partners' capital accounts in their ratio of sacrifice. If in Illustration 21 we were to treat goodwill in this manner, the entry for goodwill would have been as follows:

| *Date* | *Particulars* | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|
| | C's Capital A/c Dr.<br>To A's Capital A/c<br>To B's Capital A/c<br>(Adjustment for C's share of goodwill) | | 4,000 | <br>1,000<br>3,000 |

The above entry has the same effect on partners' capital accounts as journal entries (2) and (3).

**Applicability of Accounting Standard 26: Intangible Assets**

The Standard comes into effect in respect of expenditure incurred on intangible items during the accounting periods commencing on or after April 1, 2003. As per the Standard, Intangible Asset under AS 26 is defined as an identifiable, non monetary, without physical existence and held for use in the production or supply of goods or services for rental to others or for administrative purposes.

Significant requirements of AS 26 w.r.t Intangible Assets:

1. Intangible asset should be recognised by fulfilling the criteria as recognised under AS 26.
2. If an in asset does not satisfy recognition criteria, it should be expensed.
3. Internally generated goodwill should not be recognised as an asset.
4. Internally generated brands, mastheads, and publishing titles and other similar in substance should not be recognised as intangible assets.
5. Internally generated assets other than the goodwill, brands, mastheads, and publishing titles may be recognised provided they satisfy recognition criteria as prescribed by AS 26.

What this accounting standard implies is that **normally goodwill should not be brought into books unless it is paid for, and whenever it is recorded it should be written- off over a period.** Hence, crediting goodwill account with the amount brought in by the incoming partner for his share of goodwill and then transferring it to old partners' capital accounts by debiting goodwill account is quite in order. Similarly, when the incoming partner is unable to bring in the necessary amount for his share of goodwill, raising goodwill account at its agreed value by crediting the old partners in then old profit sharing ratio and then writing it off immediately by debiting it to all the partners (including the new partner) in the new profit sharing ratio is also acceptable as effectively it is tent amount to purchase of goodwill because new partner's capital account balance stands reduced by his share of goodwill. The same logic equally implies to the adjustments made for raising the goodwill account to its goodwill account when it already appears in the balance sheet. What is important is that in the normal course of raising goodwill as an asset should be avoided of and, if and when it is brought in to books, it should be written off in the shortest possible period.

**Test your Understanding – II**

Choose the correct alternative –

1. At the time of admission of a new partner, general reserve appearing in the old balance sheet is transferred to:
   (a) all partner's capital account
   (b) new partner's capital account
   (c) old partner's capital account
   (d) none of the above.
2. Asha and Nisha are partner's sharing profit in the ratio of 2:1. Asha's son Ashish was admitted for 1/4 share of which 1/8 was gifted by Asha to her son. The remaining was contributed by Nisha. Goodwill of the firm in valued at Rs. 40,000. How much of the goodwill will be credited to the old partner's capital account.
   (a) Rs. 2,500 each
   (b) Rs. 5,000 each
   (c) Rs. 20,000 each
   (d) None of the above.
3. A, B and C are partner's in a firm. If D is admitted as a new partner:
   (a) old firm is dissolved
   (b) old firm and old partnership is dissolved
   (c) old partnership is reconstituted
   (d) None of the above.
4. On the admission of a new partner increase in the value of assets is debited to:
   (a) Profit and Loss Adjustment account
   (b) Assets account
   (c) Old partner's capital account
   (d) None of the above.
5. At the time of admission of a partner, undistributed profits appearing in the balance sheet of the old firm is transferred to the capital account of:
   (a) old partners in old profit sharing ratio
   (b) old partners in new profit sharing ratio
   (c) all the partner in the new profit sharing ratio.

*3.5.5.3 Hidden Goodwill*

Sometimes the value of goodwill is not given at the time of admission of a new partner. In such a situation it has to be inferred from the arrangement of the capital and profit sharing ratio. Suppose, A and B are partners sharing profits equally with capitals of Rs. 45,000 each. They admitted C as a new partner for one-third share in the profit. C brings in Rs. 60,000 as his capital. Based on the amount brought in by C and his share in profit, the total capital of the newly constituted firm works out to be Rs.1,80,000 (Rs. 60,000 × 3). But the actual total capital of A, B and C works out as Rs. 1,50,000 (Rs. 45,000 + Rs. 45,000 + Rs. 60,000). Hence, it can be inferred that the difference is on account of goodwill i.e., Rs. 30,000 (Rs. 1,80,000 – Rs. 1,50,000). Which is to be shared equally (old ratio) by A and B. This shall raise their capital accounts to Rs. 60,000 each and total capital of the firm to Rs. 1,80,000. Alternatively, if goodwill account is not to be raised, C's capital account can be debited by Rs. 10,000 (his share of goodwill) and A and B's Capital accounts credited by Rs. 5,000 each, and firm's total capital remains Rs. 50,000.

### *Illustration 22*

Hem and Nem are partners in a firm sharing profits in the ratio of 3:2. Their capitals were Rs. 80,000 and Rs. 50,000 respectively. They admitted Sam on Jan. 1, 2017 as a new partner for 1/5 share in the future profits. Sam brought Rs. 60,000 as his capital. Calculate the value of goodwill of the firm and record necessary journal entries on Sam's admission.

### *Solution*

**Value of Firm's Goodwill**

| | |
|---|---|
| Sam's capital | = Rs. 60,000 |
| Sam's share | = $\frac{1}{5}$ |
| Total capital of new firm | = $5 \times$ Rs.60,000 = Rs. 3,00,000 |
| Hem's+Nem's+Sam's | = Rs.80,000 + Rs. 50,000 + Rs.60,000 |
| | = Rs.1,90,000 |
| Goodwill of the firm | = Rs.1,10,000 (Rs. 3,00,000 – Rs.1,90,000) |
| Sam's share | = $\frac{1}{5} \times$ Rs.1,10,000 = Rs. 22,000 |

**Books of Hem, Nem and Sam**
**Journal**

| *Date 2007* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| 1. | Bank A/c Dr.<br>To Sam's Capital A/c<br>(Cash brought by Sam for his capital) | | 60,000 | <br>60,000 |

| | | | | |
|---|---|---|---|---|
| 2. | Goodwill A/c Dr.<br>To Hem's Capital A/c<br>To Nem's Capital A/c<br>(Credit given for goodwill to Hem and Nem on Sam's admission) | | 1,10,000 | <br>66,000<br>44,000 |

Alternatively, if goodwill account is not to be raised, the second journal entry passed for goodwill shall be as fallows.

| | | | | |
|---|---|---|---|---|
| | Sam's Capital A/c Dr.<br>To Hem's Capital A/c<br>To Nem's Capital A/c | | 22,000 | <br>13,200<br>8,800 |

**Do It Yourself**

1. A firm's profits for the last three years are Rs. 5,00,000; Rs. 4,00,000 and Rs. 6,00,000. Calculate value of firm's goodwill on the basis of four years' purchase of the average profits for the last three years.
2. A firm's profits for the last five years were Rs. 20,000, Rs. 30,000, Rs. 40,000, Rs. 50,000 and Rs. 60,000. Calculate the value of firm's goodwill on the basis of three years' purchase of weighted average profits after using weight of 1,2,3,4 and 5 respectively.
3. A firm's profits during 2013, 2014, 2015 and 2016 were Rs. 16,000; Rs. 20,000; Rs. 24,000 and Rs. 32,000 respectively. The firm has capital investment of Rs. 1,00,000. A fair rate of return on investment is 18% p.a. Compute goodwill based on three years' purchase of the average super profits for the last four years.
4. Based on the data given in the above question, calculate goodwill by capitalisation of super profits method. Will the amount of goodwill be different if it is computed by capitalisation of average profits? Confirm your answer by numerical verification.
5. Giri and Shanta are partners in a firm sharing profits equally. They admit Kachroo into partnership who, in addition to capital, brings Rs. 20,000 as goodwill for 1/5th share of profits in the firm. What shall be journal entries if:
   (a) no goodwill appears in the books of the firm.
   (b) goodwill appears in the books of the firm at Rs. 40,000.
6. A and B are partners in a firm sharing profits in the ratio of 3:2. They admit C into partnership for 1/5th share of profits in the firm. The goodwill of the firm is valued at Rs. 1,00,000. He is unable to bring in his share of goodwill. What will be the journal entries if:
   (a) Goodwill is raised at full value and then written off.
   (b) Goodwill is not raised.

### 3.6 Adjustment for Accumulated Profits and Losses

Sometimes a firm may have accumulated profits not yet transferred to capital accounts of the partners. These are usually in the firm of general reserve, reserve fund and/or Profit and Loss Account balance. The new partner is not entitled to have any share in such accumulated profits. These are distributed among the partners by transferring it to their capital accounts in old profit sharing ratio. Similarly, if there are some accumulated losses in the form of a debit balance of profit and loss account appearing in the balance sheet of the firm.

A remote possibility, the same should also be transferred to the old partners' capital accounts (see Illustration 23).

### *Illustration 23*

Rajinder and Surinder are partners in a firm sharing profits in the ratio of 4:1. On April 15, 2017 they admit Narender as a new partner. On that date there was a balance of Rs. 20,000 in general reserve and a debit balance of Rs. 10,000 in the profit and loss account of the firm. Pass necessary journal entries regarding adjustment of a accumulate a profit or loss.

### *Solution*

**Books of Rajinder,Surinder and Narender**
**Journal**

| *Date 2015* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| Apr.15 | General Reserve A/c | Dr. | | 20,000 | |
| | To Rajinder's capital A/c | | | | 16,000 |
| | To Surender's capital A/c | | | | 4,000 |
| | (General Reserve balance transferred to the capital account of Rajinder and Surinder on Narender's admission) | | | | |
| | Rajinder's Capital A/c | Dr. | | 8,000 | |
| | Surender's Capital A/c | Dr. | | 2,000 | |
| | To Profit and Loss A/c | | | | 10,000 |
| | (Debit balance of Profit and Loss A/c transferred to old partners' capital accounts) | | | | |

## 3.7 Revaluation of Assets and Reassessment of Liabilities

At the time of admission of a new partner, it is always desirable to ascertain whether the assets of the firm are shown in books at their current values. In case the assets are overstated or understated, these are revalued. Similarly, a reassessment of the liabilities is also done so that these are brought in the books at their correct values. At times there may also be some unrecorded assets and liabilities of the firm. These also have to be brought into the books of the firm. For this purpose the firm has to prepare the Revaluation Account. The gain or loss on revaluation of each asset and liability is transferred to this account and finally its balance is transferred to the capital accounts of the old partners in their old profit sharing ratio. In other words, the revaluation account is credited with increase in the value of each asset and decrease in its liabilities because it is a gain and is debited with decrease in the value of assets and increase in its liabilities is debited to revaluation account because it is a loss. Similarly unrecorded assets are credited and unrecorded liabilities are debited to the revaluation account. If the revaluation account finally shows a credit balance then it indicates net gain and if there is a debit balance then it indicates net loss. Which will be transferred to the capital accounts of the old partners in old ratio.

The journal entries recorded for revaluation of assets and reassessment of liabilities are as follows:

(i) For increase in the value of an asset

| | | |
|---|---|---|
| Asset A/c | Dr. | |
| To Revaluation A/c | | (Gain) |

(ii) For reduction in the value of an asset

| | | |
|---|---|---|
| Revaluation A/c | Dr. | |
| To Asset A/c | | (Loss) |

(iii) For appreciation in the amount of a liability

| | | |
|---|---|---|
| Revaluation A/c | Dr. | |
| To Liability A/c | | (Loss) |

(iv) For reduction in the amount of a liability

| | | |
|---|---|---|
| Liability A/c | Dr. | |
| To Revaluation A/c | | (Gain) |

(v) For an unrecorded asset

| | | |
|---|---|---|
| Cash A/c | Dr. | |
| To Revaluation A/c | | (Gain) |

(vi) For an unrecorded liability

| | | |
|---|---|---|
| Revaluation A/c | Dr. | |
| To Cash A/c | | (Loss) |

(vii) For transfer of gain on Revaluation if credit balance

| | | |
|---|---|---|
| Revaluation A/c | Dr. | |
| To Old Partners Capital A/cs (individually) | | (Old ratio) |

(viii) For transferring loss on revaluation

| | | |
|---|---|---|
| Old partner's Capital A/cs (Individually) | Dr. | (Old ratio) |
| To Revaluation A/c | | |

*Note:* Entries (i), (ii), (iii) and (iv) are recorded only with the amount increase and decrease in the value of assets and liabilities.

### *Illustration 24*

Following in Balance Sheet of A and B who share profits in the ratio of 3:2.

**Balance Sheet of A and B as on April 1, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry creditors | | 20,000 | Cash in hand | 3,000 |
| Captials | | | Debtors | 12,000 |
| A | 30,000 | | Stock | 15,000 |
| B | 20,000 | 50,000 | Furniture | 10,000 |
| | | | Plant and Machinery | 30,000 |
| | | **70,000** | | **70,000** |

On that date C is admitted into the partnership on the following terms:

1. C is to bring in Rs. 15,000 as capital and Rs. 5,000 as premium for goodwill for $\frac{1}{6}$ share.
2. The value of stock is reduced by 10% while plant and machinery is appreciated by 10%.
3. Furniture is revalued at Rs. 9,000.
4. A provision for doubtful debts is to be created on sundry debtors at 5% and Rs. 200 is to be provided for an electricity bill.
5. Investment worth Rs. 1,000 (not mentioned in the balance sheet) is to be taken into account.
6. A creditor of Rs. 100 is not likely to claim his money and is to be written off.

Record journal entries and prepare revaluation account and capital account of partners.

### *Solution*

**Books of A, B and C**
**Journal**

| *Date 2015* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| April 01 | Bank A/c | Dr. | | 20,000 | |
| | To C's capital account | | | | 15,000 |
| | To Goodwill A/c | | | | 5,000 |
| | (Cash brought in by C as capital and goodwill/premium) | | | | |

| | | | | |
|---|---|---|---|---|
| 02 | Goodwill A/c Dr.<br>To A's Capital A/c<br>To B's Capital A/c<br>(Premium divided between A and B in sacrificing ratio 3:2) | | 5,000 | <br>3,000<br>2,000 |
| 03 | Revaluation A/c Dr.<br>To Stock A/c<br>To Furniture<br>To Provision for Doubtful Debt A/c<br>(Revaluation in the value of assets on revaluation) | | 3,100 | <br>1,500<br>1,000<br>600 |
| 04 | Plant and Machinery A/c Dr.<br>Investment A/c<br>To Revaluation A/c<br>(Increase in the value of assets on revaluation) | | 3,000<br>1,000 | <br><br>4,000 |
| 05 | Revaluation A/c Dr.<br>To Outstanding Electricity A/c<br>(Amount provided for outstanding electricity bill) | | 200 | <br>200 |
| 06 | Sundry Creditors A/c Dr.<br>To Revaluation A/c<br>(Amount not likely to be claimed by the creditors written off) | | 100 | <br>100 |
| 07 | Revaluation A/c Dr.<br>To A's Capital A/c<br>To B's Capital A/c<br>(Profit on revaluation of assets and re-assessment of liabilities transferred to A and B in old profit sharing ratio) | | 800 | <br>480<br>320 |

**Revaluation Account**

*Dr.* *Cr.*

| *Particulars* | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|
| Stock | 1,500 | Plant and Machinery | 3,000 |
| Furniture | 1,000 | Investments | 1,000 |
| Provision for Doubtful | 600 | Sundry Creditors | 100 |
| Outstanding Electricity | 200 | | |
| Profit on Revaluation transferred to: | | | |
| A's Capital | 480 | | |
| B's Capital | 320 | | |
| | **4,100** | | **4,100** |

**Partner's Capital Accounts**

*Dr.* *Cr.*

| Date 2017 | Particulars | A (Rs.) | B (Rs.) | C (Rs.) | Date 2017 | Particulars | A (Rs.) | B (Rs.) | C (Rs.) |
|---|---|---|---|---|---|---|---|---|---|
| Apr.01 | Balance c/d | 33,480 | 22,320 | 15,000 | Apr.1 | Balance b/d | 30,000 | 20,000 | |
| | | | | | | Bank | | | 15,000 |
| | | | | | | Goodwill | 3,000 | 2,000 | |
| | | | | | | Revaluation (Profit) | 480 | 320 | |
| | | **33,480** | **22,320** | **15,000** | | | **33,480** | **22,320** | **15,000** |

***Illustration 25***

Given below is the Balance Sheet of A and B, who are carrying on partnership business as on March 31,2017. A and B share profits in the ratio of 2:1.

**Balance Sheet of A and B as at March 31, 2017**

| Liabilities | | Amount (Rs.) | Assets | Amount (Rs.) |
|---|---|---|---|---|
| Bills Payable | | 10,000 | Cash in hand | 10,000 |
| Sundry creditors | | 58,000 | Cast at bank | 40,000 |
| Outstanding expenses | | 2,000 | Sundry debtors | 60,000 |
| Capitals | | | Stock | 40,000 |
| A | 1,80,000 | | Plant and machinery | 1,00,000 |
| B | 1,50,000 | 3,30,000 | Building | 1,50,000 |
| | | **4,00,000** | | **4,00,000** |

C is admitted as a partner on the date of the balance sheet on the following terms:

1. C will bring in Rs 1,00,000 as his capital and Rs 60,000 as his share of goodwill for 1/4 share in profits.
2. Plant is to be appreciated to Rs 1,20,000 and the value of buildings is to be appreciated by 10%.
3. Stock is found overvalued by Rs 4,000.
4. A provision for doubtful debts is to be created at 5% of debtors.
5. Creditors were unrecorded to the extend of Rs 1,000.

Record revaluation Account, partners' capital accounts, and the Balance Sheet of the constituted firm after admission of the new partner.

***Solution***

**Books of A and B**
**Revaluation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Stock in hand | | 4,000 | Plant and machinery | 20,000 |
| Provision for doubtful debts | | 3,000 | Buildings | 15,000 |
| Creditors | | | | |
| profit on revaluation | | 1,000 | | |
| transferred to: | | | | |
| A's Capital | 18,000 | | | |
| B's Capital | 9,000 | 27,000 | | |
| | | **35,000** | | **35,000** |

**Partners' Capital Accounts**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *A (Rs.)* | *B (Rs.)* | *C (Rs.)* | *Date 2017* | *Particulars* | *A (Rs.)* | *B (Rs.)* | *C (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| March 31 | Balance c/d | 2,38,000 | 1,79,000 | 1,00,000 | March 31 | Balabce b/d | 1,80,000 | 1,50,000 | |
| | | | | | | Bank | | | 1,00,000 |
| | | | | | | Goodwill | 40,000 | 20,000 | |
| | | | | | | Revaluation | 18,000 | 9,000 | |
| | | **2,38,000** | **1,79,000** | **1,00,000** | | | **2,38,000** | **1,79,000** | **1,00,000** |

**Balance Sheet of A, B and C as on April 01, 2016**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Bills Payable | | 10,000 | Cash in hand | | 10,000 |
| Sundry Creditors | | 59,000 | Cash at bank | | 2,00,000 |
| Outstanding Expenses | | 2,000 | Sundry Debtors | 60,000 | |
| Capitals | | | Less: Provision for doubtful debts | 3,000 | 57,000 |
| A | 2,38,000 | | | | |
| B | 1,79,000 | | Stock | | 36,000 |
| C | 1,00,000 | 5,17,000 | Plant and Machinery | | 1,20,000 |
| | | | Buildings | | 1,65,000 |
| | | **5,88,000** | | | **5,88,000** |

**Do It Yourself**

1. Aslam, Jackab, Hari are equal partners with capitals of Rs. 1,500, Rs. 1,750 and Rs. 2,000 respectively. They agree to admit Satnam into equal partnership upon payment in cash of Rs. 1,500 for one-fourth share of the goodwill and Rs. 1,800 as his capital, both sums to remain in the business. The liabilities of the old firm amount Rs. 3,000 and the assets, apart from cash, consist of Motors Rs. 1,200, Furniture Rs. 400, Stock Rs. 2,650, Debtors of Rs. 3,780. The Motors and Furniture were revalued at Rs. 950 and Rs. 380 respectively, and the depreciation written-off. Ascertain cash in hand and prepare the balance sheet of the firm after Satnam's admission.

2. Benu and Sunil are partners sharing profits in the ratio of 3:2 on April 1, 2017. Ina was admitted for 1/4 share who paid Rs. 2,00,000 as capital and Rs. 1,00,000 for premium in cash. At the time of admission, general reserve amounting to Rs. 1,20,000 and profit and loss account amounting to Rs. 60,000 appeared on the asset side of the balance sheet.
   Required: Record necessary journal entries to record the above transactions.

3. Ashoo and Rahul are partners sharing profits in the ratio of 5:3. Gaurav was admitted for 1/5 share and was asked to contribute proportionate capital and Rs. 4,000 for premium (goodwill). The Capitals of Ashoo and Rahul, after all adjustments relating to revaluation, goodwill etc., worked out to be Rs. 45,000 and Rs. 35,000 respectively.
   Required: Calculate New Profit sharing ratio, capital to be brought in by Gaurav and record necessary journal entries for the same.

### 3.8 Adjustment of Capitals

Sometimes, at the time of admission, the partners agree that their capitals should also be adjusted so as to be proportionate to their profit sharing ratio. In such a situation, if the capital of the new partner is given, the same can be used as a base for calculating the new capitals of the old partners. The capitals thus ascertained should be compared with their old capitals after all adjustments relating to goodwill reserves and revaluation of assets and liabilities, etc. have been made; and then the partner whose capital falls short, will bring in the necessary amount to cover the shortage and the partner who has a surplus, will withdraw the excess amount of capital. (See Illustration 26)

***Illustration 26***

A and B are partners sharing profits in the ratio of 2:1. C is admitted into the firm for 1/4 share of profits. C brings in Rs. 20,000 in respect of his capital. The capitals of old partners A and B, after all adjustments relating to goodwill, revaluation of assets and liabilities, etc., are Rs. 45,000 and Rs. 15,000 respectively. It is agreed that partners' capitals should be according to the new profit sharing ratio.

Determine the new capitals of A and B and record the necessary journal entries assuming that the partner whose capital falls short, brings in the amount of deficiency and the partner who has an excess, withdraws the excess amount.

***Solution***

1. Calculation of new profit sharing ratio: Assuming the new partner C quires his share from A and B in their old profit sharing ratio, i.e 2:1.

Total Share = 1

C's Share $= \frac{1}{4}$

Remaining Shares $= 1 - \frac{1}{4} = \frac{3}{4}$

A's New Share $= \frac{3}{4} \times \frac{2}{3} = \frac{6}{12}$

B's New Share $= \frac{3}{4} \times \frac{1}{3} = \frac{3}{12}$

C's New Share $= \frac{1}{4} \times \frac{3}{3} = \frac{3}{12}$

Thus, new profit sharing ratio between A,B and C is 6:3:3 or 2:1:1.

2. Required Capital of A and B

C's capital (who has 1/4 share in profits) is Rs. 20,000. B's new share in profits 1/4. Hence his capital will also be Rs. 20,000. A's new share is 2/4 which is double of C's share. Hence his capital will be Rs. 40,000.

Alternatively, based on C's capital, the total capital of the firm works out at Rs. 80,000 (4/1 × Rs.20,000). Hence, based on their share in profits, the capital of A and B will be:

A's capital $= \frac{2}{4}$ of 80,000 = Rs. 40,000

B's capital $= \frac{1}{4}$ of 80,000 = Rs. 20,000

The capital of A and B after all adjustments have been made, are Rs. 45,000 and Rs. 15,000 respectively. Hence, A will withdraw Rs. 5,000 (Rs. 45,000–Rs.40,000) from the firm whereas B will contribute additional amount of Rs. 5,000 (Rs. 20,000–Rs.15,000). The journal entries will be :

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Anount (Rs.)* |
|---|---|---|---|---|
| | A's Capital A/c Dr.<br>To Cash A/c<br>(Excess capital withdrawn by A) | | 5,000 | <br>5,000 |

| | | | | | |
|---|---|---|---|---|---|
| | Cash A/c Dr.<br>To B's Capital A/c<br>(Deficiency made good by additional amount brought in by B) | | | 5,000 | 5,000 |

Sometimes, the total capital of the firm may clearly be specified and it is agreed that the capital of each partner should be proportionate to his share in profits. In such a situation each partner's capital (including the new partner's capital to be brought by him) is calculated on the basis of his share in profits. By bringing in additional amount or withdrawal of excess amount, the final capital of each partner can be brought up to the required level.

It may be noted that subject to agreement among the partners, surplus or deficiency in each old partners' capital accounts can also be taken care of simply by transfer to their respective current accounts. (See Illustration 27)

### *Illustration 27*

A, B and C are partners in a firm sharing profits the ratio of 3:2:1. D is admitted into the firm for 1/4 share in profits, which he gets as 1/8 from A and 1/8 from B. The total capital of the firm is agreed upon as Rs. 1,20,000 and D is to bring in cash equivalent to 1/4 of this amount as his capital. The capitals of other partners are also to be adjusted in the ratio of their respective shares in profits. The capitals of A, B and C after all adjustments are Rs. 40,000, Rs. 35,000 and Rs. 30,000 respectively. Calculate the new capitals of A,B and C, and record the necessary journal entries.

### *Solution*

1. Calculation of new profit sharing ratio:

A $= \frac{1}{2} - \frac{1}{8} = \frac{3}{8}$

B $= \frac{1}{3} - \frac{1}{8} = \frac{5}{24}$

C will continue to get 1/6 as his share in the profits.
Thus, the new profit sharing ratio between A,B,C and D will be:

$\frac{3}{8} : \frac{5}{24} : \frac{1}{6} : \frac{1}{4}$ or $\frac{9}{24} : \frac{5}{24} : \frac{4}{24} : \frac{6}{24}$ or 9:5:4:6

2. Required capitals of all partners:

A's Capital = Rs. 1,20,000 $\times \frac{9}{24}$ = Rs. 45,000

B's Capital = Rs. 1,20,000 $\times \frac{5}{24}$ = Rs. 25,000

C's Capital = Rs. 1,20,000 $\times \frac{4}{24}$ = Rs. 20,000

D's Capital = Rs. 1,20,000 $\times \frac{6}{24}$ = Rs. 30,000

Hence, A will bring in Rs. 5,000 (Rs. 45,000 – Rs. 40,000), B will withdraw Rs. 10,000 (Rs. 35,000 – Rs. 25,000), C will withdraw Rs. 10,000 (Rs. 30,000 – Rs, 20,000) and D will bring in Rs. 30,000. Alternatively, the current accounts can be opened and the amounts to be brought in or withdrawn by A, B and C will be transferred to their respective current accounts subject to the agreement among the partners. The journal entries in this regard will be recorded as follows:

**Books of A, B, C and D**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Cash A/c Dr.<br>To A's Capital A/c<br>(Deficiency made good by additional amount brought in by A) | | 5,000 | <br>5,000 |
| | B's Capital A/c Dr.<br>C's Capital A/c Dr.<br>To Cash A/c<br>(Excess amounts withdrawn by B and C) | | <br>10,000<br>10,000 | <br><br><br>20,000 |
| | Cash A/c Dr.<br>To D's Capital A/c<br>(Cash brought in by D as Capital) | | 30,000 | <br>30,000 |

*Alternatively, for entries (2) and (3) above shall be*

**Books of A, B, C and D**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | A's Current A/c Dr.<br>To A's Capital A/c<br>(Deficiency in A's capital transferred to A's Current Account) | | 5,000 | <br>5,000 |
| | B's Capital A/c Dr.<br>C's Capital A/c Dr.<br>To B's Current A/c<br>To C's Current A/c<br>(Excess Capital of B transferred to their current account) | | 10,000<br>10,000<br><br>10,000 | <br><br>10,000 |

### *Illustration 28*

A and B are partners in a firm sharing profits in the ratio 2:1. C is admitted into the firm with 1/4 share in profits. He will bring in Rs. 30,000 as capital and capitals of A and B are to be adjusted in the profit sharing ratio. The Balance Sheet of A and B as on March 31, 2017 (before C's admission) was as under:

**Balance Sheet of A and B as at March 31,2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 8,000 | Cash in hand | 2,000 |
| Bills payable | | 4,000 | Cash at bank | 10,000 |
| General Reserve | | 6,000 | Sundry debtors | 8,000 |
| Capitals: A | 50,000 | | Stock | 10,000 |
| B | 32,000 | 82.,000 | Furniture | 5,000 |
| | | | Machinery | 25,000 |
| | | | Building | 40,000 |
| | | **1,00,000** | | **1,00,000** |

Other terms of agreement are as under:

1. C will bring in Rs. 12,000 as his share of goodwill.
2. Building was valued at Rs. 45,000 and Machinery at Rs. 23,000.
3. A provision for bad debts is to be created @ 6% on debtors.
4. The capital accounts of A and B are to be adjusted by opening current accounts.

Record necessary journal entries, show necessary ledger accounts and prepare fund's Balance Sheet after C's admission.

**Books of A, B and C**
**Journal**

| *Date 2017* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Anount (Rs.)* |
|---|---|---|---|---|---|
| March 1 | Cash A/c | Dr. | | 42,000 | |
| | To C's Capital A/c | | | | 30,000 |
| | To Goodwill A/c | | | | 12,000 |
| | (Amounts of capital and goodwill brought in by C) | | | | |
| | Goodwill A/c | Dr. | | 12,000 | |
| | To A's Capital A/c | | | | 8,000 |
| | To B's Capital A/c | | | | 4,000 |
| | (Goodwill brought in by C transferred to A and B in their ratio of sacrifice) | | | | |
| | Revaluation A/c | Dr. | | 2,480 | |
| | To Machinery A/c | | | | 2,000 |
| | To Provision for Bad Debts A/c | | | | 480 |
| | (Decrease in the value of machinery and creation of provision for bad debts) | | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Building A/c Dr.<br>To Revaluation A/c<br>(Increase in the value of building) | | | 5,000 | <br>5,000 |
| | Revaluation A/c Dr.<br>To A's Capital A/c<br>To B's Capital A/c<br>(Profit on revaluation distributed between A and B) | | | 2,520 | <br>1,680<br>840 |
| | General Reserve A/c Dr.<br>To A's Capital A/c<br>To B's Capital A/c<br>(Undistributed profit transferred to A and B) | | | 6,000 | <br>4,000<br>2,000 |
| | A's Capital A/c Dr.<br>To A's Current A/c<br>(The excess of capital transferred to partner's current account) | | | 3,680 | <br>3,680 |
| | B's Capital A/c Dr.<br>To B's Current A/c<br>(The excess of B's capital transferred to partner's current account) | | | 8.840 | <br>8,840 |

**Revaluation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Machinery | | 2,000 | Building | 5,000 |
| Provision for bad debts | | 480 | | |
| Transfer of profit on revaluation to: | | | | |
| A's Capital | 1,680 | | | |
| B's Capital | 840 | 2,520 | | |
| | | **5,000** | | **5,000** |

**Partner's Capital Accounts**

*Dr.* *Cr.*

| *Date* | *Particulars* | *A (Rs.)* | *B (Rs.)* | *C (Rs.)* | *Date* | *Particulars* | *A (Rs.)* | *B (Rs.)* | *C (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Current Accounts | 3,680 | 8,840 | | | Balance b/d | 50,000 | 32,000 | |
| | Balance c/d | 60,000 | 30,000 | 30,000 | | Cash | | | 30,000 |
| | | | | | | Goodwill | 8,000 | 4,000 | |
| | | | | | | General Reserve | 4,000 | 2,000 | |
| | | | | | | Revaluation (transfer of profit) | 1,680 | 840 | |
| | | 63,680 | 38,840 | 30,000 | | | 63,680 | 38,840 | 30,000 |

**Partner's Current Accounts**

*Dr.* *Cr.*

| Date | Particulars | A (Rs.) | B (Rs.) | C (Rs.) | Date | Particulars | A (Rs.) | B (Rs.) | C (Rs.) |
|---|---|---|---|---|---|---|---|---|---|
| | Balance c/d | 3,680 | 8,840 | - | | Capital A/cs | 3,680 | 8,840 | - |

**Balance Sheet of A, B and C as on March 31, 2017**

| Liabilities | | Amount (Rs.) | Assets | | Amount (Rs.) |
|---|---|---|---|---|---|
| Creditors | | 8,000 | Cash in hand | | 44,000 |
| Bills Payable | | 4,000 | Cash at bank | | 10,000 |
| Partners Current accounts: | | | Sundry Debtors | 8000 | |
| A | 3,680 | | *Less:* Provision for Doubtful Debts | 480 | 7,520 |
| B | 8,840 | 12,520 | | | |
| Capitals | | | Stock | | 10,000 |
| A | 60,000 | | Furniture | | 5,000 |
| B | 30,000 | | Machinery | | 23,000 |
| C | 30,000 | 1,20,000 | Buildings | | 45,000 |
| | | **1,44,520** | | | **1,44,520** |

*Notes*

1. New Profit Sharing Ratio

Since nothing is given as to how C acquired his share from A and B. It is assumed that A and B, between themselves continue to share the profit in the old ratio of 2:1.

C's Share of Profits $= \frac{1}{4}$

Remaining Share $= 1 - \frac{1}{4} = \frac{3}{4}$

A's New Share $= \frac{2}{3}$ of $\frac{3}{4} = \frac{6}{12} = \frac{1}{2}$

B's New Share $= \frac{1}{3}$ of $\frac{3}{4} = \frac{3}{12} = \frac{1}{4}$

Thus, new profit sharing ratio between A, B and C is 2:1:1

2. New Capitals of A and B

C's capital is Rs 30,000 and his share of profits is 1/4. Based on C's capital, the total capital of the firm will work out at Rs 1,20,000 (4/1 × 30,000) and the respective capitals of A and B will be as follows :

A's Capital $= \frac{2}{4}$ of 1,20,000 = Rs. 60,000

B's Capital $= \frac{1}{4}$ of 1,20,000 = Rs. 30,000

***Illustration 29***

The Balance Sheet of W and R who shared profits in the ratio of 3 : 2 was as follows on January. 01, 2015.

**Balance Sheet of W and R as on Jan. 01, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Sundry Creditors | | 20,000 | Cash in hand | | 5,000 |
| Partner's Capital | | | Sundry Debtors | 20,000 | |
| W | 40,000 | | *Less:* Provision for doubtful debts | 700 | 19,300 |
| R | 30,000 | 70,000 | Stock | | 25,000 |
| | | | Plant and Machinery | | 35,000 |
| | | | Patents | | 5,700 |
| | | **90,000** | | | **90,000** |

On this date B was admitted as a partner on the following conditions:

1. He was to get 4/15 share of profit.
2. He had to bring in Rs 30,000 as his capital.
3. He would pay cash for goodwill which would be based on 2 ½ years purchase of the profits of the past four years.
4. W and R would withdraw half the amount of goodwill premium brought by B.
5. The assets would be revalued as: Sundry Debtors at book value less a provision of 5%; Stock at Rs 20,000; Plant and Machinery at Rs 40,000; and Patents at Rs 12,000.
6. Liabilities were valued at Rs 23,000, one bill for goods purchased having been omitted from books.
7. Profit for the past four years were :

| | | | |
|---|---|---|---|
| 2011 | 15,000 | 2013 | 14,000 |
| 2012 | 20,000 | 2014 | 17,000 |

Give necessary journal entries and ledger accounts to record the above, and prepare the Balance Sheet after B's admission.

***Solution***

The goodwill of the firm is Rs 41,250 worked out as under :

Profits :

| | |
|---|---|
| Year 2011 | 15,000 |
| Year 2012 | 20,000 |
| Year 2013 | 14,000 |
| Year 2014 | 17,000 |
| | 66,000 |

Average Profits = Rs. $\frac{66,000}{4}$ = Rs. 16,500

Goodwill at 2 ½ Years purchase = Rs .16,500 × $\frac{5}{2}$ = Rs. 41,250

B's share of goodwill = Rs. 41,250 × $\frac{4}{15}$ = Rs, 11,000.

**Books of W, R and B**
**Journal**

| *Date 2015* | *Particulars* | | *L.F.* | *Debit (Rs.)* | *Credit (Rs.)* |
|---|---|---|---|---|---|
| Jan. 01 | Cash A/c | Dr. | | 41,000 | |
| | To B's Capital A/c | | | | 30,000 |
| | To Goodwill A/c | | | | 11,000 |
| | (Sum brought in by B as his Capital and his share (4/5) of the goodwill) | | | | |
| | Goodwill A/c | Dr. | | 11,000 | |
| | To W's Capital A/c | | | | 6,600 |
| | To R's Capital A/c | | | | 4,400 |
| | (Goodwill brought by B credited to W's and R's capital accounts in old profit ratio of 3:2 ) | | | | |
| | W's Capital A/c | Dr. | | 3,300 | |
| | R's Capital A/c | | | 2,200 | |
| | To Cash A/c | | | | 5,500 |
| | (Amount (half of goodwill) withdrawn by the old partners) | | | | |
| | Revaluation A/c | Dr. | | 5,300 | |
| | To Provision for Doubtful Debts A/c | | | | 300 |
| | To Stock A/c | | | | 5,000 |
| | (Increase in provision for doubtfull debts to Rs 1,000 (5% of Rs 20,000) and decrease in value of stock) | | | | |
| | Plant and Machinery A/c | Dr. | | 5,000 | |
| | Patents A/c | Dr. | | 6,300 | |
| | To Revaluation A/c | | | | 11,300 |
| | (Increase in value of Plant and Machinery and Patents) | | | | |
| | Revaluation A/c | Dr. | | 3,000 | |
| | To Sundry Creditors A/c | | | | 3,000 |
| | (Increase in liabilities) | | | | |

| | | | | |
|---|---|---|---|---|
| | Revaluation A/c Dr.<br>To W's Capital A/c<br>To R's Capital A/c<br>(Being profit on adjustment transferred to partners' capital accounts) | | 3,000 | <br>1,800<br>1,200 |

**Cash Account**

*Dr.* *Cr.*

| *Date 2015* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date 2015* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Jan. 1 | Balance b/d | | 5,000 | Jan. 1 | W's Capital | | 3,300 |
| | B's Capital | | 30,000 | | R's Capital | | 2,200 |
| | Goodwill | | 11,000 | | Balance c/d | | 40,500 |
| | | | **46,000** | | | | **46,000** |

**B's Capital Account**

*Dr.* *Cr.*

| *Date 2015* | *Particulars* | *J.F.* | *Anount (Rs.)* | *Date 2015* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Jan. 1 | Balance c/d | | 30,000 | Jan. 1 | Cash | | 30,000 |
| | | | **30,000** | | | | **30,000** |

**W's Capital Account**

*Dr.* *Cr.*

| *Date 2015* | *Particulars* | *J.F.* | *Anount (Rs.)* | *Date 2015* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Jan.1 | Cash | | 3,300 | Jan. 1 | Balance b/d | | 40,000 |
| | Balance c/d | | 45,100 | | Goodwill | | 6,600 |
| | | | | | Revaluation | | 1,800 |
| | | | **48,400** | | | | **48,400** |

**R's Capital Account**

*Dr.* *Cr.*

| *Date 2015* | *Particulars* | *J.F.* | *Anount (Rs.)* | *Date 2015* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Jan. 1 | Cash | | 2,200 | Jan. 1 | Balance b/d | | 30,000 |
| | Balance c/d | | 33,400 | | Goodwill | | 4,400 |
| | | | | | Revaluation | | 1,200 |
| | | | **35,600** | | | | **35,600** |

**Revaluation Account**

*Dr.* *Cr.*

| *Particulars* | *Anount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|
| Provision for doubtful debts | 300 | Plant and Machinery | 5,000 |
| Stock | 5,000 | Patents | 6,300 |
| Sundry Creditors | 3,000 | | |
| Profit transferred to: | | | |
| W 3/5 1,800 | | | |
| R 2/5 1,200 | 3,000 | | |
| | **11,300** | | **11,300** |

**Balance Sheet of W, R and B as on January 01, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Sundry Creditors | | 23,000 | Cash in hand | | 40,500 |
| Capitals: | | | Sundry debtors : | 20,000 | |
| W | 45,100 | | *Less:* Provision for | | |
| R | 33,400 | | doubtful debits | 1,000 | 19,000 |
| B | 30,000 | 1,08,500 | Stock | | 20,000 |
| | | | Plant & Machinery | | 40,000 |
| | | | Patents | | 12,000 |
| | | **1,31,500** | | | **1,31,500** |

The new profit sharing ratio will be:

$$W = (1-\frac{4}{15})\times\frac{3}{5}=\frac{11}{15}\times\frac{3}{5}=\frac{33}{75}$$

$$R = (1-\frac{4}{15})\times\frac{2}{5}=\frac{11}{15}\times\frac{2}{5}=\frac{22}{75}$$

$$B = \frac{4}{15}=\frac{20}{75}$$

The new ratio is 33 : 22 : 20.

## 3.9 Change in Profit Sharing Ratio among the existing Partners

Sometimes, the partners of a firm decide to change their existing profit sharing ratio without any admission or retirement of a partner. This results in a gain of additional share in future profits of the firm for some partners while a loss of a part thereof for other partners. For example, A, B and C are partners in a firm sharing profits in the ratios of 8:5:3 It is felt that A will no more be able to actively participate in the affairs of the firm. Hence, with effect from April 1, 2007, they decided that, in future they will share the profits in the ratio of 5 : 6 : 5. This results in A losing $\frac{3}{16}\left(\frac{8}{16}-\frac{5}{16}\right)$ share in profits while B and C gaining $\frac{1}{16}\left(\frac{6}{16}-\frac{5}{16}\right)$ and $\frac{2}{16}\left(\frac{5}{16}-\frac{3}{16}\right)$. In such a situation, first of all, the loss and gain in the value of goodwill (if any) will have to be adjusted. This is done by raising goodwill at its full value in the MD profit sharing ratio and then writing it off in the new ratio. Alternatively, losing partners can be credited and gaining partners debited with appropriate amounts without goodwill account appearing in the books, as explained earlier in the context of the admission of a new partners.

Any change, in the profit sharing ratio, like admission of partner, may also involve adjustments in respect of revaluation of assets and liabilities, transfer of accumulated profit and losses to partners' capital accounts in the old profit sharing ratio and adjustment of partners' capitals, if specified, so as to make them proportionate to the new profit sharing ratio. All this is done in the same way as in case of admission of a partner.

***Illustration 30***

Dinesh, Ramesh and Suresh are partners in a firm sharing profits and losses in the ratio of 3:3:2. They decided to share the profits equally w.e.f. April 1, 2015. Their Balance Sheet as on March 31, 2016 was as follows :

| *Liabilities* | | *Amount Rs.* | *Assets* | *Amounts Rs.* |
|---|---|---|---|---|
| Sundry Creditors | | 1,50,000 | Cash at Bank | 40,000 |
| General Reserve | | 80,000 | Bills Receivable | 50,000 |
| Partner's Loan : | | | Sundry Debtors | 60,000 |
| Dinesh | 40,000 | | Stock | 1,20,000 |
| Ramesh | 30,000 | 70,000 | Fixed Assets | 2,80,000 |
| Partners Capital : | | | | |
| Dinesh | 1,00,000 | | | |
| Ramesh | 80,000 | | | |
| Suresh | 70,000 | 2,50,000 | | |
| | | **5,50,000** | | **5,50,000** |

It was also decide that :

1. The fixed assets should be valued at Rs. 3,31,000.
2. A provisions of 5% on sundry debtors be made doubtful debts.

3. The goodwill of the firm at this date be valued at $4\frac{1}{2}$ years purchase of the average net profits of last, five years which were Rs. 14,000; Rs. 17,000; Rs. 20,000; Rs. 22,000 and Rs. 27,000 respectively.
4. The value of stock be reduced to Rs. 1,12,000.
5. Goodwill was not to appear in the books. Pass the necessary journal entries and prepare the revised Balance sheet of the firm.

### *Solution*

**Books of Dinesh, Ramesh and Suresh**
**Journal**

| | | | | |
|---|---|---|---|---|
| 2016<br>Apr. 01 | Fixed Assets A/c Dr.<br>To Revaluation A/c<br>(Increase in value of fixed assets) | | 51,000 | <br>51,000 |
| | Revaluation A/c Dr.<br>To Stock A/c<br>To Provisions for Doubtful debts A/c<br>(Decrease in value of stock and creation of provision for doubtful debts) | | 11,000 | <br>8,000<br>3,000 |
| | Revaluation A/c Dr.<br>To Dinesh's Capital A/c<br>To Ramesh's Capital A/c<br>To Suresh's Capital A/c<br>(Profit on revaluation transferred to partners' capital accounts in old profit sharing ratio) | | 40,000 | <br>15,000<br>15,000<br>10,000 |
| | General Reserve A/c Dr.<br>To Dinesh's Capital A/c<br>To Ramesh's Capital A/c<br>To Suresh's Capital A/c<br>(General reserve, transferred to partners' capital accounts in old ratio) | | 80,000 | <br>30,000<br>30,000<br>20,000 |
| | Suresh's Capital A/c Dr.<br>To Dinesh's Capital A/c<br>To Ramesh's Capital A/c<br>(Goodwill adjusted in partner's capital accounts in their sacrificing/gaining ratio) | | 7,500 | <br>3,750<br>3,750 |

*Working Notes:*

1. Gain or sacrifice of partners

| | Dinesh | Ramesh | Suresh |
|---|---|---|---|
| Old Share | 3/8 | 3/8 | 2/8 |
| New Share | 1/3 | 1/3 | 1/3 |
| Difference | 1/24<br>(sacrifice) | 1/24<br>(sacrifice) | 2/24<br>(gain) |

2. Goodwill

Total Profits : Rs. 14,000 + Rs. 17,000 + Rs. 20,000 + Rs. 22,000 + Rs. 27,000
= Rs. 1,00,000

Average Profits = Rs. 1,00,000/5
= Rs. 20,000

Goodwill = Rs. 20,000 × $4\frac{1}{2}$
= Rs. 90,000

Suresh in expected to bring in Rs. 7,500
as he gain $\frac{2}{24}$ share in profits.

Dinesh in expected to receive Rs. 3,750
as he sacrifices $\frac{1}{24}$ share in profits

Ramesh is expected to receive Rs. 3,750
as he sacrifices $\frac{1}{24}$ share in profits

Had we raised Goodwill A/c in the old ratio and written it off in the new ratio, the net effect would have been the same.

| | | | | |
|---|---|---|---|---|
| (a) | Good will A/c Dr.<br>To Dinesh's Capital A/c<br>To Ramesh's Capital A/c<br>To Suresh's Capital A/c<br>(Goodwill raised in old ratio) | | 90,000 | <br>33,750<br>33,750<br>22,500 |
| (b) | Dinesh's Capital A/c Dr.<br>Ramesh's Capital A/c Dr.<br>Suresh's Capital A/c Dr.<br>To Goodwill A/c | | 30,000<br>30,000<br>30,000 | <br><br><br>90,000 |

3. Capital Accounts

| Date | Particulars | J.F. | Dinesh (Rs.) | Ramesh (Rs.) | Suresh (Rs.) | Date | Particulars | J.F. | Dinesh (Rs.) | Ramesh (Rs.) | Suresh (Rs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Dinesh's Account | | | | 3,750 | | Balance b/d | | 1,00,000 | 80,000 | 70,000 |
| | Ramesh's Account | | | | 3,750 | | Profit on Revaluation | | 15,000 | 15,000 | 10,000 |
| | Balance c/d | | 1,48,750 | 1,28,750 | 92,500 | | General Reserve | | 30,000 | 30,000 | 20,000 |
| | | | | | | | Suresh's Account | | 3,750 | 3,750 | |
| | | | 1,48,750 | 1,28,750 | 1,00,000 | | | | 1,48,750 | 1,28,750 | 1,00,000 |

**Balance Sheet as on April 01, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Sundry Creditors | | 1,50,000 | Cash at Bank | | 40,000 |
| Partner's Loan : | | | Bills Receivable | | 50,000 |
| Dinesh | 40,000 | | Sundry Debtors | 60,000 | |
| Ramesh | 30,000 | 70,000 | Less Prov. for Doubtful Debts | 3,000 | 57,000 |
| Capitals: | | | Stock | | 1,12,000 |
| Dinesh | 1,48,750 | | Fixed Assets | | 3,31,000 |
| Ramesh | 1,28,750 | | | | |
| Suresh | 92,500 | 3,70,000 | | | |
| | | **5,90,000** | | | **5,90,000** |

## *Terms Introduced in the Chapter*

1. Reconstitution of Partnership Firm.
2. Revaluation of Assets.
3. Reassessment of liabilities.
4. Undistributed and accumulated profits and losses.
5. Accumulated Losses.
6. Goodwill.
7. Profit Sharing Ratio.
8. Reserves.
9. Revaluation Account.
10. Sacrificing Ratio.
11. Change in Profit Sharing Ratio.

## *Summary*

1. *Matters requiring adjustments at the time of admission of a partner:* Various matters which need adjustments in the books of firm at the time of admission of a new partner are : goodwill, revaluation of assets and liabilities, reserves and other accumulated profits and losses and the capitals of the old partners (if agreed).
2. *Determining the new profit sharing ratio and calculating sacrificing ratio:* The new partner acquires his share in profits from the old partners. This reduces the old partner's share in profits. Hence, the problem of determining the new profit sharing ratio simply involves the determination of old partner's new share in

the profits of the reconstituted firm. Given the new partner's share in profits and the ratio, in which he acquires it from the old partners, the new share of each old partner shall be worked out by deducting his share of sacrifice from his old share in profits. The ratio in which the old partners have agreed to sacrifice their shares in profit in favour of the new partner is called the sacrificing ratio. It is usually same as the old profit sharing ratio. However, based on the agreement it can be different also.

3. *Treatment of Goodwill:* Goodwill is an intangible asset and belonges to its owner at a point of time. On the admission of a new partner the goodwill of the firm belongs to the old partners. It means that on the admission of a new partner some adjustments must be made into the capital accounts of the old partners for goodwill so that the new partner will not acquire a share in that profit which the firm earns because of its goodwill earned before admission without making any payment for the same. The amount that the new partner pays for goodwill is called goodwill. From accounting point of view the firm may have to face different situations for the treatment of goodwill at the time of admission of a partner. The amount of premium brought in by the new partner is shared by old partners in the ratio of sacrifice. In case the new partner fails to bring his share of premium for goodwill in cash than the capital account of the new partner is debited for his share of premium of goodwill and the old partners capital accounts are credited in their sacrificing ratio.
4. *Adjustments for Revaluation of Assets and Reassessment of Liabilities:* If, at the time of admission of a partner, the assets and liabilities are revalued or some asset or liability is found unrecorded, necessary adjustments are made through the Revaluatiion Account. Any gain or loss arising from such exercise shall be distributed among the old partner's in their old profit sharing ratio.
5. *Adjustment for reserves and accumulated profits/losses:* If, at the time of admission of a partner, any reserve and accumulated profits or losses exist in books of the firm, these should be transferred to old partner's capital/current accounts in their old profit sharing ratio.
6. *Determining/Adjusting partners' capital:* If agreed, the partner's capital may be adjusted so as to be proportionate to their new profit sharing ratio. In that case, the new partner's capital is normally used as a base for determining the new capitals of the old partners and necessary adjustment made through case or by transfer to partner's current accounts. Other basis also may be available for determining capitals of the partners after admissioin of the new partner like sharing the total capital to be in the firm immeidately after admission of the new partner.
7. *Change in profit sharing ratio:* Sometimes the partners of a firm may agree to change their existing profit sharing ratio. With a result, some partners will gain in future profits while others will lose. In such a situation, the partner who gain by change in profit effecting amounts to one partner buying the share of profit from another partner. Apart from the payment for compensation, the change in profit sharing ratio also necessitates adjustment in partner's capital accounts with respect to undistributed profits and reserves, revaluation of assets and reassessment of liabilities.

## *Questions for Practice*

**Short Answer Questions**

1. Identify various matters that need adjustments at the time of admission of a new partner.
2. Why it is necessary to ascertain new profit sharing ratio even for old partners when a new partner is admitted?
3. What is sacrificing ratio? Why is it calculated?
4. On what occasions sacrificing ratio is used?
5. If some goodwill already exists in the books and the new partner brings in his share of goodwill in cash, how will you deal with existing amount of goodwill?
6. Why there is need for the revaluation of assets and liabilities on the admission of a partner?

**Long Answer Questions**

1. Do you advise that assets and liabilities must be revalued at the time of admission of a partner? If so, why? Also describe how is this treated in the book of account?
2. What is goodwill? What factors affect goodwill?
3. Explain various methods of valuation of goodwill.
4. If it is agreed that the capital of all the partners should be proportionate to the new profit sharing ratio, how will you work out the new capital of each partner? Give examples and state how necessary adjustments will be made.
5. Explain how will you deal with goodwill when new partner is not in a position to bring his share of goodwill in cash.
6. Explain various methods for the treatment of goodwill on the admission of a new partner?
7. How will you deal with the accumulated profits and losses and reserves on the admission of a new partner?
8. At what figures the value of assets and liabilities appear in the books of the firm after revaluation has been due. Show with the help of an imaginary balance sheet.

## *Numerical Questions*

1. A and B were partners in a firm sharing profits and losses in the ratio of 3:2. They admit C into the partnership with 1/6 share in the profits. Calculate the new profit sharing ratio?

   (**Ans :** 3:2:1)
2. A,B,C were partners in a firm sharing profits in 3:2:1 ratio. They admitted D for 10% profits. Calculate the new profit sharing ratio?

   (**Ans :** 9:6:3:2)
3. X and Y are partners sharing profits in 5:3 ratio admitted Z for 1/10 share which he acquired equally for X and Y. Calculate new profit sharing ratio?

   (**Ans :** 23:13:4)

4. A, B and C are partners sharing profits in 2:2:1 ratio admitted D for 1/8 share which he acquired entirely from A. Calculate new profit sharing ratio?\

   (**Ans :** 11:16:8:5)
5. P and Q are partners sharing profits in 2:1 ratio. They admitted R into partnership giving him 1/5 share which he acquired from P and Q in 1:2 ratio. Calculate new profit sharing ratio?

   (**Ans :** 3:1:1)
6. A, B and C are partners sharing profits in 3:2:2 ratio. They admitted D as a new partner for 1/5 share which he acquired from A, B and C in 2:2:1 ratio respectively. Calculate new profit sharing ratio?

   (**Ans :** 61:36:43:35)
7. A and B were partners in a firm sharing profits in 3:2 ratio. They admitted C for 3/7 share which he took 2/7 from A and 1/7 from B. Calculate new profit sharing ratio?

   (**Ans :** 11:9:15)
8. A, B and C were partners in a firm sharing profits in 3:3:2 ratio. They admitted D as a new partner for 4/7 profit. D acquired his share 2/7 from A. 1/7 from B and 1/7 from C. Calculate new profit sharing ratio?

   (**Ans :** 5:13:6:32)
9. Radha and Rukmani are partners in a firm sharing profits in 3:2 ratio. They admitted Gopi as a new partner. Radha surrendered 1/3 of her share in favour of Gopi and Rukmani surrendered 1/4 of her share in favour of Gopi. Calculate new profit sharing ratio?

   (**Ans :** 4:3:3.)
10. Singh, Gupta and Khan are partners in a firm sharing profits in 3:2:3 ratio. They admitted Jain as a new partner. Singh surrendered 1/3 of his share in favour of Jain: Gupta surrendered 1/4 of his share in favour of Jain and Khan surrendered 1/5 in favour of Jain. Calculate new profit sharing ratio?

    (**Ans :** 20:15:24:21.)
11. Sandeep and Navdeep are partners in a firm sharing profits in 5:3 ratio. They admit C into the firm and the new profit sharing ratio was agreed at 4:2:1. Calculate the sacrificing ratio?

    (**Ans :** 1:1.)
12. Rao and Swami are partners in a firm sharing profits and losses in 3:2 ratio. They admit Ravi as a new partner for 1/8 share in the profits. The new profit sharing ratio between Rao and Swami is 4:3. Calculate new profit sharing ratio and sacrificing ratio?

    (**Ans :** New Profit Ratio 4:3:1 and Sacrificing Ratio 4:1)
13. Compute the value of goodwill on the basis of four years' purchase of the average profits based on the last five years? The profits for the last five years were as follows:

| | *Rs.* |
|---|---|
| 2013 | 40,000 |
| 2014 | 50,000 |
| 2015 | 60,000 |
| 2016 | 50,000 |
| 2017 | 60,000 |

(**Ans :** Rs. 2,08,000)

14. Capital employed in a business is Rs. 2,00,000. The normal rate of return on capital employed is 15%. During the year 2015 the firm earned a profit of Rs. 48,000. Calculate goodwill on the basis of 3 years purchase of super profit?

    (**Ans :** Rs. 54,000)

15. The books of Ram and Bharat showed that the capital employed on 31.12.2016 was Rs. 5,00,000 and the profits for the last 5 years : 2015 Rs. 40,000; 2014 Rs. 50,000; 2013 Rs. 55,000; 2012 Rs. 70,000 and 2011 Rs. 85,000. Calculate the value of goodwill on the basis of 3 years purchase of the average super profits of the last 5 years assuming that the normal rate of return is 10%?

    (**Ans :** Rs. 30,000)

16. Rajan and Rajani are partners in a firm. Their capitals were Rajan Rs. 3,00,000; Rajani Rs. 2,00,000. During the year 2015 the firm earned a profit of Rs. 1,50,000. Calculate the value of goodwill of the firm assuming that the normal rate of return is 20%?

    (**Ans :** Rs. 2,50,000)

17. A business has earned average profits of Rs. 1,00,000 during the last few years. Find out the value of goodwill by capitalisation method, given that the assets of the business are Rs. 10,00,000 and its external liabilities are Rs. 1,80,000. The normal rate of return is 10%?

    (**Ans :** Rs. 1,80,000)

18. Verma and Sharma are partners in a firm sharing profits and losses in the ratio of 5:3. They admitted Ghosh as a new partner for 1/5 share of profits. Ghosh is to bring in Rs. 20,000 as capital and Rs. 4,000 as his share of goodwill premium. Give the necessary journal entries:
    a) When the amount of goodwill is retained in the business.
    b) When the amount of goodwill is fully withdrawn.
    c) When 50% of the amount of goodwill is withdrawn.
    d) When goodwill is paid privately.

19. A and B are partners in a firm sharing profits and losses in the ratio of 3:2. They decide to admit C into partnership with 1/4 share in profits. C will bring in Rs. 30,000 for capital and the requisite amount of goodwill premium in cash. The goodwill of the firm is valued at Rs, 20,000. The new profit sharing ratio is 2:1:1. A and B withdraw their share of goodwill. Give necessary journal entries?

20. Arti and Bharti are partners in a firm sharing profits in 3:2 ratio, They admitted Sarthi for 1/4 share in the profits of the firm. Sarthi brings Rs. 50,000 for his

capital and Rs. 10,000 for his 1/4 share of goodwill. Goodwill already appears in the books of Arti and Bharti at Rs. 5,000. the new profit sharing ratio between Arti, Bharti and Sarthi will be 2:1:1. Record the necessary journal entries in the books of the new firm?

21. X and Y are partners in a firm sharing profits and losses in 4:3 ratio. They admitted Z for 1/8 share. Z brought Rs. 20,000 for his capital and Rs. 7,000 for his 1/8 share of goodwill. Subsequently X, Y and Z decided to show goodwill in their books at Rs. 40,000. Show necessary journal entries in the books of X, Y and Z?

22. Aditya and Balan are partners sharing profits and losses in 3:2 ratio. They admitted Christopher for 1/4 share in the profits. The new profit sharing ratio agreed was 2:1:1. Christopher brought Rs. 50,000 for his capital. His share of goodwill was agreed to at Rs. 15,000. Christopher could bring only Rs. 10,000 out of his share of goodwill. Record necessary journal entries in the books of the firm?

23. Amar and Samar were partners in a firm sharing profits and losses in 3:1 ratio. They admitted Kanwar for 1/4 share of profits. Kanwar could not bring his share of goodwill premium in cash. The Goodwill of the firm was valued at Rs. 80,000 on Kanwar's admission. Record necessary journal entry for goodwill on Kanwar's admission.

24. Mohan Lal and Sohan Lal were partners in a firm sharing profits and losses in 3:2 ratio. They admitted Ram Lal for 1/4 share on 1.1.2013. It was agreed that goodwill of the firm will be valued at 3 years purchase of the average profits of last 4 years which were Rs. 50,000 for 2013, Rs. 60,000 for 2014, Rs. 90,000 for 2015 and Rs. 70,000 for 2016. Ram Lal did not bring his share of goodwill premium in cash. Record the necessary journal entries in the books of the firm on Ram Lal's admission when:
    a) Goodwill already appears in the books at Rs. 2,02,500.
    b) Goodwill appears in the books at Rs. 2,500.
    c) Goodwill appears in the books at Rs. 2,05,000.

25. Rajesh and Mukesh are equal partners in a firm. They admit Hari into partnership and the new profit sharing ratio between Rajesh, Mukesh and Hari is 4:3:2. On Hari's admission goodwill of the firm is valued at Rs. 36,000. Hari is unable to bring his share of goodwill premium in cash. Rajesh, Mukesh and Hari decided not to show goodwill in their balance sheet. Record necessary journal entries for the treatment of goodwill on Hari's admission.

26. Amar and Akbar are equal partners in a firm. They admitted Anthony as a new partner and the new profit sharing ratio is 4:3:2. Anthony could not bring this share of goodwill Rs. 45,000 in cash. It is decided to do adjustment for goodwill without opening goodwill account. Pass the necessary journal entry for the treatment of goodwill?

27. Given below is the Balance Sheet of A and B, who are carrying on partnership business on 31.12.2016. A and B share profits and losses in the ratio of 2:1.

**Balance Sheet of A and B as on December 31, 2016**

| *Liabilites* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Bills Payable | | 10,000 | Cash in Hand | 10,000 |
| Creditors | | 58,000 | Cash at Bank | 40,000 |
| Outstanding Expenses | | 2,000 | Sundry Debtors | 60,000 |
| | | | Stock | 40,000 |
| Capitals: | | | Plant | 1,00,000 |
| A | 1,80,000 | | Buildings | 1,50,000 |
| B | 1,50,000 | 3,30,000 | | |
| | | **4,00,000** | | **4,00,000** |

C is admitted as a partner on the date of the balance sheet on the following terms:

(i) C will bring in Rs. 1,00,000 as his capital and Rs. 60,000 as his share of goodwill for 1/4 share in the profits.

(ii) Plant is to be appreciated to Rs. 1,20,000 and the value of buildings is to be appreciated by 10%.

(iii) Stock is found over valued by Rs. 4,000.

(iv) A provision for bad and doubtful debts is to be created at 5% of debtors.

(v) Creditors were unrecorded to the extent of Rs. 1,000.

Pass the necessary journal entries, prepare the revaluation account and partners' capital accounts, and show the Balance Sheet after the admission of C.

(**Ans :** Gain of Revaluation Rs. 27,000. Balance Sheet Rs. 5,88,000)

28. Leela and Meeta were partners in a firm sharing profits and losses in the ratio of 5:3. In Jan. 2017 they admitted Om as a new partner. On the date of Om's admission the balance sheet of Leela and Meeta showed a balance of Rs. 16,000 in general reserve and Rs. 24,000 (Cr) in Profit and Loss Account. Record necessary journal entries for the treatment of these items on Om's admission. The new profit sharing ratio between Leela, Meeta and Om was 5:3:2.

29. Amit and Viney are partners in a firm sharing profits and losses in 3:1 ratio. On 1.1.2017 they admitted Ranjan as a partner. On Ranjan's admission the profit and loss account of Amit and Viney showed a debit balance of Rs. 40,000. Record necessary journal entry for the treatment of the same.

30. A and B share profits in the proportions of 3/4 and 1/4. Their Balance Sheet on Dec. 31, 2016 was as follows:

**Balance Sheet of A and B as on December 31, 2016**

| *Liabilites* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Sundry creditors | 41,500 | Cash at Bank | 26,500 |
| Reserve fund | 4,000 | Bills Receivable | 3,000 |
| Capital Accounts | | Debtors | 16,000 |
| A | 30,000 | Stock | 20,000 |
| B | 16,000 | Fixtures | 1,000 |
| | | Land & Building | 25,000 |
| | **91,500** | | **91,500** |

On Jan. 1, 2017, C was admitted into partnership on the following terms:

(a) That C pays Rs. 10,000 as his capital.

(b) That C pays Rs. 5,000 for goodwill. Half of this sum is to be withdrawn by A and B.

(c) That stock and fixtures be reduced by 10% and a 5%, provision for doubtful debts be created on Sundry Debtors and Bills Receivable.

(d) That the value of land and buildings be appreciated by 20%.

(e) There being a claim against the firm for damages, a liability to the extent of Rs. 1,000 should be created.

(f) An item of Rs. 650 included in sundry creditors is not likely to be claimed and hence should be written back.

Record the above transactions (journal entries) in the books of the firm assuming that the profit sharing ratio between A and B has not changed. Prepare the new Balance Sheet on the admission of C.

(**Ans :** Gain on Revaluation Rs. 1600. Balance Sheet Total Rs. 1,05,950).

31. A and B are partners sharing profits and losses in the ratio of 3:1. On Ist Jan. 2017 they admitted C as a new partner for 1/4 share in the profits of the firm. C brings Rs. 20,000 as for his 1/4 share in the profits of the firm. The capitals of A and B after all adjustments in respect of goodwill, revaluation of assets and liabilities, etc. has been worked out at Rs. 50,000 for A and Rs. 12,000 for B. It is agreed that partner's capitals will be according to new profit sharing ratio. Calculate the new capitals of A and B and pass the necessary journal entries assuming that A and B brought in or withdrew the necessary cash as the case may be for making their capitals in proportion to their profit sharing ratio?

32. Pinky, Qumar and Roopa partners in a firm sharing profits and losses in the ratio of 3:2:1. S is admitted as a new partner for 1/4 share in the profits of the firm, whichs he gets 1/8 from Pinky, and 1/16 each from Qmar and Roopa. The total capital of the new firm after Seema's admission will be Rs. 2,40,000.

Seema is required to bring in cash equal to 1/4 of the total capital of the new firm. The capitals of the old partners also have to be adjusted in proportion of their profit sharing ratio. The capitals of Pinky, Qumar and Roopa after all adjustments in respect of goodwill and revaluation of assets and liabilities have been made are Pinky Rs. 80,000, Qumar Rs. 30,000 and Roopa Rs. 20,000. Calculate the capitals of all the partners and record the necessary journal entries for doing adjustments in respect of capitals according to the agreement between the partners?

33. The following was the Balance Sheet of Arun, Bablu and Chetan sharing profits and losses in the ratio of $\frac{6}{14}:\frac{5}{14}:\frac{3}{14}$ respectively.

| *Liabilites* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 9,000 | Land and Buildings | 24,000 |
| Bills Payable | | 3,000 | Furniture | 3,500 |
| Capital Accounts | | | Stock | 14,000 |
| Arun | 19,000 | | Debtors | 12,600 |
| Bablu | 16,000 | | Cash | 900 |
| Chetan | 8,000 | 43,000 | | |
| | | **55,000** | | **55,000** |

They agreed to take Deepak into partnership and give him a share of 1/8 on the following terms: a) that Deepak should bring in Rs. 4,200 as goodwill and Rs. 7,000 as his Capital; (b) that furniture be depreciated by 12%; (c) that stock be depreciated by 10% (d) that a Reserve of 5% be created for doubtful debts: (e) that the value of land and buildings having appreciated be brought upto Rs. 31,000 ;(f) that after making the adjustments the capital accounts of the old partners (who continue to share in the same proportion as before) be adjusted on the basis of the proportion of Deepak's Capital to his share in the business, i.e., actual cash to be paid off to, or brought in by the old partners as the case may be.

Prepare Cash Account, Profit and Loss Adjustment Account (Revaluation Account) and the Opening Balance Sheet of the new firm.

(**Ans :** Gain on revaluation Rs. 4,550. Balance Sheet Total Rs. 68,000))

34. Azad and Babli are partners in a firm sharing profits and losses in the ratio of 2:1. Chintan is admitted into the firm with 1/4 share in profits. Chintan will bring in Rs. 30,000 as his capital and the capitals of Azad and Babli are to be adjusted in the profit sharing ratio. The Balance Sheet of Azad and Babli as on December 31, 2016 (before Chintan's admission) was as follows:

**Balance Sheet of A and B as on 31.12.2016**

| *Liabilites* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 8,000 | Cash in hand | 2,000 |
| Bills payable | | 4,000 | Cash at bank | 10,000 |
| General reserve | | 6,000 | Sundry debtors | 8,000 |
| Capital accounts: | | | Stock | 10,000 |
| Azad | 50,000 | | Funiture | 5,000 |
| Babli | 32,000 | 82,000 | Machinery | 25,000 |
| | | | Buildings | 40,000 |
| | | **1,00,000** | | **1,00,000** |

It was agreed that:

i) Chintan will bring in Rs. 12,000 as his share of goodwill premium.

ii) Buildings were valued at Rs. 45,000 and Machinery at Rs. 23,000.

iii) A provision for doubtful debts is to be created @ 6% on debtors.

iv) The capital accounts of Azad and Babli are to be adjusted by opening current accounts.

Record necessary journal entries, show necessary ledger accounts and prepare the Balance Sheet after admission.

(**Ans :** Gain or Revaluation Rs. 2,520. Balance Sheet Rs. 1,44,520).

35. Ashish and Dutta were partners in a firm sharing profits in 3:2 ratio. On Jan. 01, 2015 they admitted Vimal for 1/5 share in the profits. The Balance Sheet of Ashish and Dutta as on Jan. 01, 2016 was as follows:

**Balance Sheet of A and B as on 1.1.2016**

| *Liabilites* | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | 15,000 | Land & Building | | 35,000 |
| Bills Payable | 10,000 | Plant | | 45,000 |
| Ashish Capital | 80,000 | Debtors | 22,000 | |
| Dutta's Capital | 35,000 | Less : Provision | 2,000 | 20,000 |
| | | Stock | | 35,000 |
| | | Cash | | 5,000 |
| | **1,40,000** | | | **1,40,000** |

It was agreed that:

i) The value of Land and Building be increased by Rs. 15,000.

ii) The value of plant be increased by 10,000.

iii) Goodwill of the firm be valued at Rs. 20,000.

iv) Vimal to bring in capital to the extent of 1/5$^{th}$ of the total capital of the new firm.

Record the necessary journal entries and prepare the Balance Sheet of the firm after Vimal's admission.

(**Ans :** Gain on Revaluation Rs. 25,000. Balance Sheet Total Rs. 2,25,000).

## *Check-list to Check your Understanding*

*Test your Understanding – I*

1. (a), 2 (a), 3. (b).

*Test your Understanding – II*

1. (c), 2. (b), 3. (c), 4. (b), 5. (b).

# Reconstitution of a Partnership Firm – Retirement/Death of a Partner

4

**Learning Objectives**

*After studying this chapter you will be able to:*

- *calculate new profit sharing ratio and gaining ratio of the remaining partners after the retirement/death of a partner;*
- *describe the accounting treatment of goodwill in the event of retirement/ death of a partner;*
- *make the necessary entries in respect of unrecorded assets and liabilities;*
- *make necessary adjustment for accumulated profits or losses;*
- *ascertain the retiring/ deceased partner claim against the firm and explain the mode of its settlement;*
- *prepare the retiring partner's loan account, if required; and*
- *prepare the deceased partner's executor's account in the case of death of a partner and the balance sheet of a reconstituted firm.*

You have learnt that retirement or death of a partner also leads to reconstitution of a partnership firm. On the retirement or death of a partner, the existing partnership deed comes to an end, and in its place, a new partnership deed needs to be framed whereby, the remaining partners continue to do their business on changed terms and conditions. There is not much difference in the accounting treatment at the time of retirement or in the event of death. In both the cases, we are required to determine the sum due to the retiring partner (in case of retirement) and to the legal representatives (in case of deceased partner) after making necessary adjustments in respect of goodwill, revaluation of a assets and liabilities and transfer of accumulated profits and losses. In addition, we may also have to compute the new profit sharing's ratio among the remaining partners and so also their gaining ratio, This covers all these aspects in detail.

## 4.1 Ascertaining the Amount Due to Retiring/ Deceased Partner

The sum due to the retiring partner (in case of retirement) and to the legal representatives/ executors (in case of death) includes:

(i) credit balance of his capital account;
(ii) credit balance of his current account (if any);
(iii) his share of goodwill;
(iv) his share of accumulated profits (reserves);
(v) his share in the gain of revaluation of assets and liabilities;

(vi) his share of profits up to the date of retirement/death;
(vii) interest on his capital, if involved, up to the date of retirement/death; and
(viii) salary/commission, if any, due to him up to the date of retirement/death.

The following deductions, if any, may have to be made from his share:

(i) debit balance of his current account (if any);
(ii) his share of goodwill to be written off, if necessary;
(iii) his share of accumulated losses;
(iv) his share of loss on revaluation of assets and liabilities;
(v) his share of loss up to the date of retirement/death;
(vi) his drawings up to the date of retirement/death;
(vii) interest on drawings, if involved, up to the date of retirement/death.

Thus, as in the case of admission, the various accounting aspects involved on retirement or death of a partner are as follows:

1. Ascertainment of new profit sharing ratio and gaining ratio;
2. Treatment of goodwill;
3. Revaluation of assets and liabilities;
4. Adjustment in respect of unrecorded assets and liabilities;
5. Distribution of accumulated profits and losses;
6. Ascertainment of share of profit or loss up to the date of retirement/death;
7. Adjustment of capital, if required;
8. Settlement of the amounts due to retired/deceased partner;

## 4.2 New Profit Sharing Ratio

New profit sharing ratio is the ratio in which the remaining partners will share future profits after the retirement or death of any partner. The new share of each of the remaining partner will consist of his own share in the firm plus the share acquired from the retiring /deceased partner.

Consider the following situations :

(a) normally, the continuing partners acquire the share of retiring or deceased partners in the old profit sharing ratio, and there is no need to compute the new profit sharing ratio among them, as it will be same as the old profit sharing ratio among them. In fact, in the absence of any information regarding profit sharing ratio in which the remaining partners acquire the share of retiring/deceased partner, it is assumed that they will acquire it in the old profit sharing ratio and so share the future profits in their old ratio. For example, Asha, Deepti and Nisha are partners in a firm sharing profits and losses in the ratio of 3:2:1. If Deepti retires, the new profit sharing ratio between Asha and Nisha will be 3:1, unless they decide otherwise.

(b) The continuing partners may acquire the share in the profits of the retiring/deceased partner in a proportion other than their old ratio, In that case, there is need to compute the new profit sharing ratio among them.

*For example:* Naveen, Suresh and Tarun are partners sharing profits and losses in the ratio of 5:3:2. Suresh retires from the firm and his share was required by Naveen and Tarun in the ratio 2:1. In such a case, the new share of profit will be calculated as follows:

New share of Continuing Partner = Old Share + Acquired share from the Outgoing Partner

Gaining Ratio 2 : 1

Share acquired by Naveen $= \frac{2}{3} \text{ of } \frac{3}{10}$

$= \frac{2}{3} \times \frac{3}{10} = \frac{2}{10}$

Share acquired by Tarun $= \frac{1}{3} \text{ of } \frac{3}{10}$

$= \frac{1}{3} \times \frac{3}{10} = \frac{1}{10}$

Share of Naveen $= \frac{5}{10} + \frac{2}{10} = \frac{7}{10}$

Share of Tarun $= \frac{2}{10} + \frac{1}{10} = \frac{3}{10}$

Thus, the new profit sharing ratio of Naveen and Tarun will be = 7 : 3.

(c) The contributing partners may agree on a specified new profit sharing ratio: In that case the ratio so specified will be the new profit sharing ratio.

## 4.3 Gaining Ratio

The ratio in which the continuing partners have acquired the share from the retiring/deceased partner is called the gaining ratio. Normally, the continuing partners acquire the share of retiring/deceased partner in their old profit sharing ratio, In that case, the gaining ratio of the remaining partners will be the same as their old profit sharing ratio among them and there is no need to compute the gaining ratio, Alternatively, proportion in which they acquire the share of the retiring/deceased partner may be duly spacified. In that case, again, there is no need to calculate the gaining ratio as it will be the ratio in which they have acquired the share of profit from the retiring deceased partner. The problem of calculating gaining ratio arises primarily when the new profit sharing ratio of the continuing partners is specified. In such a situation, the gaining ratio should be calculated by, deducting the old share of each continuing partners from his new share. For example, Amit, Dinesh and Gagan are partners sharing profits in the ratio of 5:3:2.

Dinesh retires. Amit and Gagan decide to share the profits of the new firm in the ratio of 3:2. The gaining ratio will be calculated as follows :

Amit's Gaining Share $= \frac{3}{5} - \frac{5}{10} = \frac{6-5}{10} = \frac{1}{10}$

Gagan's Gaining Share $= \frac{2}{5} - \frac{2}{10} = \frac{4-2}{10} = \frac{2}{10}$

Thus, Gaining Ratio of Amit and Gagan = 1:2

This implies Amit gains $\frac{1}{3}$ and Gagan gains $\frac{2}{3}$ of Dinesh's share of profit.

**Gaining share of Continuing Partner = New share – Old share**

**Do it Yourself**

Distinguish between Gaining Ratio and Sacrificing Ratio in terms of:

1. Meaning
2. Effect on Partner's Share of Profit
3. Mode of calculation
4. When to calculate

***Illustration 1***

Madhu, Neha and Tina are partners sharing profits in the ratio of 5:3:2. Calculate new profit sharing ratio and gaining ratio if

1. Madhu retires
2. Neha retires
3. Tina retires.

***Solution***

Given old ratio among Madhu : Neha : Tina as 5 : 3 : 2

1. If Madhu retires, new profit sharing Ratio between Neha and Tina will be
   Neha : Tina = 3:2 and Gaining Ratio of Neha and Tina =3:2
2. If Neha retires new profit sharing Ratio between Madhu and Tina will be
   Madhu : Tina = 5:2
   Gaining Ratio of Madhu and Tina = 5:2
3. If Tina retires, new profit sharing ratio between Madhu and Neha will be:
   Madhu : Neha = 5:3
   Gaining ratio of Madhu and Neha = 5:3

***Illustration 2***

Alka, Harpreet and Shreya are partners sharing profits in the ratio of 3:2:1. Alka retires and her share is taken up by Harpreet and Shreya in the ratio of 3:2. Calculate the new profit sharing ratio.

***Solution***

Gaining Given, Ratio of Harpreet and Shreya = 3:2 = $\frac{3}{5}:\frac{2}{5}$

Old Profit Sharing Ratio of between Alka, Harpreet and Shreya 3:2:1 = $\frac{3}{6}:\frac{2}{6}:\frac{1}{6}$

Share acquired by Harpreet = $\frac{3}{5}$ of $\frac{3}{6} = \frac{9}{30}$

Share acquired by Shreya = $\frac{2}{5}$ of $\frac{3}{6} = \frac{6}{30}$

New Share = Old Share + Acquired Share

Harpreet's New Share = $\frac{2}{6}+\frac{9}{30}=\frac{19}{30}$

Shreya's New Share = $\frac{1}{6}+\frac{6}{30}=\frac{11}{30}$

New Profit Sharing Ratio of Harpreet and Shreya = 19:11

***Illustration 3***

Murli, Naveen and Omprakash are partners sharing profits in the ratio of $\frac{3}{8}$, $\frac{1}{2}$ and $\frac{1}{8}$. Murli retires and surrenders 2/3rd of his share in favour of Naveen and the remaining share in favour of Omprakash. Calculate new profit sharing and the gaining ratio of the remaining partners.

***Solution***

| | | | *Naveen* | *Omprakash* |
|---|---|---|---|---|
| (i) | Old Share | | $\frac{1}{2}$ | $\frac{1}{8}$ |
| (ii) | Share Acquired by Naveen and Omprakash from Murli | = | $\frac{2}{3}$ of $\frac{3}{8}=\frac{2}{8}$ | $\frac{1}{3}$ of $\frac{3}{8}=\frac{1}{8}$ |
| (iii) | New Share = (i) + (ii) | = | $\frac{1}{2}+\frac{2}{8}$ | $\frac{1}{8}+\frac{1}{8}$ |
| | | = | $\frac{6}{8}$ or $\frac{3}{4}$ | = $\frac{2}{8}$ or $\frac{1}{4}$ |

Thus, the New profit sharing Ratio = $\frac{3}{4}:\frac{1}{4}$ or 3:1, and the

Gaining Ratio = $\frac{2}{8}:\frac{1}{8}$ or 2:1 [as calculated in (ii)].

### *Illustration 4*

Kumar, Lakshya, Manoj and Naresh are partners sharing profits in the ratio of 3 : 2 : 1 : 4. Kumar retires and his share is acquired by Lakshya and Manoj in the ratio of 3:2. Calculate new profit sharing ratio and gaining ratio of the remaining partners.

### *Solution*

| | | *Lakshya* | *Manoj* | *Naresh* |
|---|---|---|---|---|
| (i) | Old Share | $\frac{2}{10}$ | $\frac{1}{10}$ | $\frac{4}{10}$ |
| (ii) | Acquired Share from Kumar | $\frac{3}{5}$ of $\frac{3}{10}$ | $\frac{2}{5}$ of $\frac{3}{10}$ | Nil |
| | | $=\frac{9}{50}$ | $=\frac{6}{50}$ | Nil |
| (iii) | New share = (i) = (ii) | $\frac{2}{10}+\frac{9}{50}$ | $=\frac{1}{10}+\frac{6}{50}$ | $=\frac{4}{10}+$ Nil |
| | | $=\frac{19}{50}$ | $=\frac{11}{50}$ | $=\frac{20}{50}$ |

The New Profit Sharing Ratio is 19 : 11 : 20

Gaining ratio is 3 : 2 : 0

*Notes :* 1. Since Lakshya and Manoj are acquiring Kumar's share of profit in the ratio of 3:2, hence, the gaining ratio will be 3:2 between Lakshya and Manoj.

2. Naresh has neither sacrificed nor gained.

### *Illustration 5*

Ranjana, Sadhna and Kamana are partners sharing profits in the ratio 4:3:2. Ranjana retires; Sadhna and Kamana decided to share profits in future in the ratio of 5:3. Calculate the Gaining Ratio.

### *Solution*

Gaining Share = New Share – Old Share

Sadhna's Gaining Share = $\frac{5}{8}-\frac{3}{9}=\frac{45-24}{72} = \frac{21}{72}$

Kamana's Gaining Share = $\frac{3}{8}-\frac{2}{9} = \frac{27-16}{72} = \frac{11}{72}$

Gaining Ratio between Sadhna and Kamana = 21:11.

**Do it Yourself**

1. Anita, Jaya and Nisha are partners sharing profits and losses in the ratio of 1 : 1 : 1 Jaya retires from the firm. Anita and Nisha decided to share the profit in future in the ratio 4:3. Calculate the gaining ratio.
2. Azad, Vijay and Amit are partners sharing profits and losses in the proportion of $\frac{1}{4}, \frac{1}{8}$ and $\frac{10}{16}$. Calculate the new profit sharing ratio between continuing partners if (a) Azad retires; (b) Vijay retires; (c) Amit retires.
3. Calculate the gaining ratio in each of the above situations.
4. Anu, Prabha and Milli are partners. Anu retires. Calculate the future profit sharing ratio of continuing partners and gaining ratio if they agree to acquire her share : (a) in the ratio of 5:3; (b) equally.
5. Rahul, Robin and Rajesh are partners sharing profits in the ratio of 3 : 2 : 1. Calculate the new profit sharing ratio of the remaining partners if (i) Rahul retires; (ii) Robin retires; (iii) Rajesh retires.
6. Puja, Priya, Pratistha are partners sharing profits and losses in the ratio of 5 : 3 : 2. Priya retires. Her share is taken by Priya and Pratistha in the ratio of 2 : 1. Calculate the new profit sharing ratio.
7. Ashok, Anil and Ajay are partners sharing profits and losses in the ratio of $\frac{1}{2}, \frac{3}{10}$ and $\frac{1}{5}$. Anil retires from the firm. Ashok and Ajay decide to share future profits and losses in the ratio of 3 : 2. Calculate the gaining ratio.

## 4.4 Treatment of Goodwill

The retiring or deceased partner is entitled to his share of goodwill at the time of retirement/death because the goodwill has been earned by the firm with the efforts of all the existing partners. Hence, at the time of retirement/death of a partner, goodwill is valued as per agreement among the partners the retiring/ deceased partner compensated for his share of goodwill by the continuing partners (who have gained due to acquisition of share of profit from the retiring/ deceased partner) in their gaining ratio.

The accounting treatment for goodwill in such a situation depends upon whether or, not goodwill already appears in the books of the firm.

### *4.4.1 When Goodwill does not Appear in the Books*

When goodwill does not appear in the books of the firm there are four ways in which the retiring partner can be given the necessary credit for loss of his share of goodwill, these are as follows:

(a) Goodwill is raised at its full value and retained in the books as such: In this case, Goodwill Account is debited will its full value and all the partner's (including the retired/deceased partner) capital accounts are credited in the old profit sharing ratio. The full value of goodwill will appear in the balance sheet of the reconstituted firm.

(b) Goodwill is raised at its full value and written off immediately: If it decided that goodwill should not be refrained and shown in the balance sheet of the reconstituted firm then, after raising goodwill at its value by crediting all the partners' capital accounts (including that of the retired/deceased partners, it should be written off by debiting the remaining partners in their new profit sharing ratio and crediting the goodwill account with its full value.

(c) Goodwill is raised to the extent of retired/deceased partner's share and written off immediately: In this case goodwill account is raised only to the extent of retired/deceased partner's share by debiting goodwill account with the proportionate amount and credited only to the retired/deceased partner's capital account. Thereafter, the remaining partners capital accounts are debited in their gaining ratio and goodwill account/credited to write it off.

(d) No goodwill account is raised at all in firm's books: If it is decided that the goodwill account should not appear in firm's books at all, in that case it is adjusted discretely through partners capital accounts by recording the following journal entry.

| | |
|---|---|
| Continuing partners' capital A/c's | Dr. |
| (individually in their gaining ratio) | |
| To Retiring/Deceased Partner's Capital A/c | |
| (Retiring/deceased in the remaining partners' capital accounts into their gaining ratio) | |

Let us take an example and clarity the treatment of goodwill on retirement or death of a partner using all the above alternatives. A, B. and C are partners in a firm sharing profits in the ratio of 3:2:1 B retires. The goodwill of the firm is valued at Rs. 60,000 and the remaining partners A and C continue to share profits in the ratio of 3:1. The journal entries passed under various alternatives shall be as follows:

*(a) If goodwill is raised at full value and retained in books*

| | | | |
|---|---|---|---|
| Goodwill A/c | Dr. | 60,000 | |
| To A's capital A/c | | | 30,000 |
| To B's capital A/c | | | 20,000 |
| To C's capital A/c | | | 10,000 |
| (Goodwill raised at full value and credited to all the partners in their old profit sharing ratio) | | | |

*(b) If goodwill is raised at full value and written off immediately.*

| | | | |
|---|---|---|---|
| (i) Goodwill A/c | Dr. | 60,000 | |
| To A's capital A/c | | | 30,000 |
| To B's capital A/c | | | 20,000 |
| To C's capital A/c | | | 10,000 |
| (Goodwill raised at full value and credited to all partners in old ratio) | | | |
| (ii) A's capital A/c | Dr. | 45,000 | |
| C's capital A/c | Dr. | 15,000 | |
| To Goodwill A/c | | | 60,000 |
| (Goodwill written off and debited to remaining partners in the new ratio) | | | |

*(c) If goodwill is raised to the extent of retiring partner's share and written off immediately.*

| | | | |
|---|---|---|---|
| (i) Goodwill A/c | Dr. | 20,000 | |
| To B's capital A/c | | | 20,000 |
| (Goodwill raised to the extant of B's share) | | | |
| (ii) A's capital A/c | Dr. | 15,000 | |
| C's capital A/c | Dr. | 5,000 | |
| To goodwill A/c | | | 20,000 |
| (Goodwill written off by debiting remaining partners' in gaining ratio) | | | |

*(d) If goodwill is not to appear in firm's books at all*

| | | | |
|---|---|---|---|
| A's capital A/c | Dr. | 15,000 | |
| C's capital A/c | Dr. | 5,000 | |
| To C's capital A/c | | | 20,000 |
| (B's share of goodwill adjusted to remaining partners' capital accounts in gaining ratio) | | | |

It may also happen that as a result of decision on the new profit sharing ratio among the remaining partners, a continuing partner may also sacrifice a part of his share in future profits. In such a situation his capital account will also be credited along with the retiring/deceased partner's capital account in proportion to his sacrifice and the other continuing partners' capital accounts will be debited based on their gain in the future profit ratio.

### *Illustration 6*

Keshav, Nirmal and Pankaj are partners sharing profits and losses in the ratio of 4 : 3 : 2. Nirmal retires and the goodwill is valued at Rs. 72,000. Keshav and Pankaj decided to share future profits and losses in the ratio of 5 : 3. Record necessary journal entries (a) when goodwill is raised at its full value and written off immediately (b) when goodwill is not to appear in firms books at all.

### Solution

(a) When Goodwill is raised and written-off

**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| (i) | Goodwill A/c | Dr. | | 72,000 | |
| | To Keshav's Capital A/c | | | | 32,000 |
| | To Nirmal's Capital A/c | | | | 24,000 |
| | To Pankaj's Capital A/c | | | | 16,000 |
| | (Goodwill raised at its full value in old profit sharing ratio) | | | | |
| (ii) | Keshav's Capital A/c | Dr. | | 45,000 | |
| | Pankaj's capital A/c | Dr. | | 27,000 | |
| | To Goodwill A/c | | | | 72,000 |
| | (Goodwill written off in the new profit sharing ratio) | | | | |

(b) When goodwill is not to appear in firm's books at all

**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| | Keshav's Capital A/c | Dr. | | 13,000 | |
| | Pankaj's Capital A/c | Dr. | | 11,000 | |
| | To Nirmal's Capital A/c | | | | 24,000 |
| | (Nirmal's share of goodwill adjusted to Keshav and Pankaj in their gaining ratio of 13:11) | | | | |

*Working Notes*

1. Vimal's share of goodwill = Rs. 72,000 $\times \frac{3}{9}$ = Rs. 24,000
2. Calculation of Gaining Ratio

   Gaining Share = New Share – Old Share

   Keshav's Gaining Share = $\frac{5}{8} - \frac{4}{9} = \frac{13}{72}$

   Pankaj's Gaining Share = $\frac{3}{8} - \frac{2}{9} = \frac{11}{72}$

   Hence, Gaining Ratio between Keshav and Pankaj is 13:11 i.e. $\frac{13}{24} : \frac{11}{24}$

### Illustration 7

Jaya, Kirti, Ekta and Shewata are partners in a firm sharing profits and losses in the ratio of 2 : 1 : 2 : 1. On Jaya's retirement, the goodwill of the firm is valued at Rs. 36,000. Kirti, Ekta and Shewata decided to share future profits equally. Record the necessary journal entry for the treatment of goodwill without opening 'Goodwill Account'.

### Solution

**Books of Kirti, Ekta and Shewata**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| | Kirti's Capital A/c | Dr. | | 6,000 | |
| | Shewata's Capital A/c | Dr. | | 6,000 | |
| | To Jaya's Capital A/c | | | | 12,000 |
| | (Jaya's share of goodwill adjusted to remaining in their gaining ratio) | | | | |

*Working Notes*

1. Jaya's Share of Goodwill

   $= \text{Rs. } 36{,}000 \times \frac{2}{6} = \text{Rs. } 12{,}000$

2. Calculation of Gaining Ratio
   Gaining Share = New Share – Old Share

   Kirti's Gain $= \frac{1}{3} - \frac{1}{6} = \frac{2-1}{6} = \frac{1}{6}$

   Ekta's Gain $= \frac{1}{3} - \frac{2}{6} = \frac{2-2}{6} = \frac{0}{6}$ (Neither Gain nor Sacrifice)

   Shewata's Gain $= \frac{1}{3} - \frac{1}{6} = \frac{2-1}{6} = \frac{1}{6}$

   Hence, Gaining ratio between Kirti and Shewata $\frac{1}{6} : \frac{1}{6}$ = 1:1

### Illustration 8

Deepa, Neeru and Shilpa were partners in a firm sharing profits in the ratio of 5 : 3 : 2. Neeru retired and the new profit sharing ratio between Deepa and Shilpa was 2 : 3. On Neeru's retirement, the goodwill of the firm was valued at Rs. 1,20,000. Record necessary journal entry for the treatment of goodwill on Neeru's retirement.

## *Solution*

**Books of Deepa and Shilpa**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Shilpa's Capital A/c Dr.<br>To Neeru's Capital A/c<br>To Deepa's Capital A/c<br>(Shilpa compensated Neeru for her share of goodwill and to Deepa for the sacrifice made by her on Neeru's retirement) | | 48,000<br>36,000 | <br><br>12,000 |

*Working Notes*

1. Calculation of Gaining Ratio
   Gaining Share = New Share – Old Share

   Deepa's Gaining Share = $\frac{2}{5} - \frac{5}{10} = \frac{4-5}{10} = -\frac{1}{10} = \left(\frac{1}{10}\right)$ i.e., Sacrifice.

   Shilpa's Gaining Share = $\frac{3}{5} - \frac{2}{10} = \frac{6-2}{10} = \frac{4}{10}$ i.e., Gain

2. Hence, Shilpa will compensate both Neeru (retiring partner) and Deepa (continuing partner who has sacrificed) to the extent of their sacrifice worked out as follows:
   Deepa's Sacrifice = Goodwill of the firm × Sacrificing Share

   $$= \text{Rs. } 1{,}20{,}000 \times \frac{1}{10} = \text{Rs. } 12{,}000$$

   Neeru's (Retiring Partner's Sacrifice) = Rs. $1{,}20{,}000 \times \frac{3}{10}$ = Rs. 36,000.

**Test your Understanding – I**

*Choose the correct option in the following questions:*

1. Abhishek, Rajat and Vivek are partners sharing profits in the ratio of 5:3:2. If Vivek retires, the New Profit Sharing Ratio between Abhishek and Rajat will be–
   (a) 3:2
   (b) 5:3
   (c) 5:2
   (d) None of these
2. The old profit sharing ratio among Rajender, Satish and Tejpal were 2:2:1. The New Profit Sharing Ratio after Satish's retirement is 3:2. The gaining ratio is–
   (a) 3:2
   (b) 2:1
   (c) 1:1
   (d) 2:2

3. Anand, Bahadur and Chander are partners. Sharing Profit equally On Chander's retirement, his share is acquired by Anand and Bahadur in the ratio of 3:2. The New Profit Sharing Ratio between Anand and Bahadur will be–
   (a) 8:7
   (b) 4:5
   (c) 3:2
   (d) 2:3
4. In the absence of any information regarding the acquisition of share in profit of the retiring/deceased partner by the remaining partners, it is assumed that they will acquire his/her share:-
   (a) Old Profit Sharing Ratio
   (b) New Profit Sharing Ratio
   (c) Equal Ratio
   (d) None of these

### *Illustration 9*

Hanny, Pammy and Sunny are partners sharing profits in the ratio of 3 : 2 : 1. Goodwill is appearing in the books at a value of Rs. 60,000. Pammy retires and at the time of Pammy's retirement, goodwill is valued at Rs. 84,000. Hanny and Sunny decided to share future profits in the ratio of 2:1. Record the necessary journal entries.

### *Solution*

**Books of Hanny and Sunny**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| | Hanny's Capital A/c | Dr. | | 30,000 | |
| | Pammy's Capital A/c | Dr. | | 20,000 | |
| | Sunny's Capital A/c | Dr. | | 10,000 | |
| | To Goodwill A/c | | | | 60,000 |
| | (Existing goodwill written-off in old ratio) | | | | |
| | Hanny's Capital | Dr. | | 14,000 | |
| | Sunny's Capital | Dr. | | 14,000 | |
| | To Pammy's Capital A/c | | | | 28,000 |
| | (Pammy's share of goodwill adjusted to Hanny's and Sunny's capital account to the extent of their gain) | | | | |

*Working Notes*

(i) Pammy's share of current value of goodwill $\frac{1}{3}$ of Rs. 84,000

$$= 84,000 \times \frac{1}{3} = \text{Rs. } 28,000$$

(ii) Gaining Share = New Share – Old Share

Hanny's Gaining Share = $\frac{2}{3} - \frac{3}{6} = \frac{1}{6}$

Sunny's Gaining Share = $\frac{1}{3} - \frac{1}{6} = \frac{1}{6}$

This gaining Ratio of Hanny and Sunny is $\frac{1}{6} : \frac{1}{6} = 1:1$

### *4.4.2 When Goodwill is already Appearing in the Books*

If value of goodwill already appearing in the books of the firm equals with the current value of goodwill, normally no adjustment is required because goodwill stands credited in the accounts of all the partners including the retiring one. In case the present value of goodwill is different from its book value, an adjustment entry is required for the difference between the value already appearing in the books (called book value) and its present value. In such a situation, there are two possibilities: (a) the book value of goodwill is lower than its current value, and (b) the book value is greater than its current value. These are discussed as follows.

(a) *If the book value of goodwill is lower than its present value :* In this case the goodwill is raised to its present value by debiting goodwill Account with the excess of its current value over the book value and crediting all partners' capital accounts in their old profit sharing ratio. For example, Deepak, Nakul and Rajesh are partners sharing profits in the ratio of 5:3:2. Goodwill appears in the books at a value of Rs. 20,000. Nakul retires and, on the day of Nakul's retirement, goodwill is valued at Rs. 24,000. In this case, the following journal entry will be recorded.

**Books of Deepak, Nakul and Rajesh**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Goodwill A/c Dr. | | 4,000 | |
| | To Deepak's Capital A/c | | | 2,000 |
| | To Nakul's Capital A/c | | | 1,200 |
| | To Rajesh's Capital A/c | | | 800 |
| | (Increase in the value of goodwill credited to all partners' capital accounts in their old profit sharing ratio of 5:3:2) | | | |

(b) *If the book value of goodwill is greater than its current value:* In this case the difference between the book value of goodwill and its current value will be credited to Goodwill Account and debited to all Partners' capital accounts in their old profit sharing ratio. For example, Mohanlal, Girdharilal and Shyamlal are partners sharing profits in the ratio of 4:3:1. Shyamlal retires from the firm. On Shyamlal's retirement, goodwill has been valued at Rs. 52,000. There was a goodwill account already appearing in the books of the firm with a value of Rs. 60,000. In this case, the following journal entry will be recorded.

**Books of Mohanlal, Girdharilal and Shyamlal**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| | Mohan Lal's Capital A/c | Dr. | | 4,000 | |
| | Girdhari Lal's Capital A/c | Dr. | | 3,000 | |
| | Shyam Lal's Capital A/c | Dr. | | 1,000 | |
| | To Goodwill A/c | | | | 8,000 |
| | (Decrease in the value of goodwill adjusted among all the partners' capital accounts in their old profit sharing ratio) | | | | |

It may be noted that in all the above situations, goodwill appears in the balance sheet at its full value. In case it is decided by the partners that it should be written-off, fully or partially, it can be done by debiting the remaining partner's capital accounts in the new profit sharing ratio and crediting Goodwill Account with the respective value.

Alternatively, instead of first raising goodwill to its full value and then writing it off, if the partners so decide, we may first write off the existing goodwill as it appears in the book by debiting all partners in the old profit sharing ratio, and then give the necessary credit to the retiring/deceased partner by debiting the remaining partners capital accounts in their gaining ratio and crediting the retired/deceased partner by his share of goodwill. (See illustration 9)

### *4.4.3 Hidden Goodwill*

If the firm has agreed to settle the retiring or deceased partner's account by paying him a lump sum amount, then the amount paid to him in excess of what is due to him, based on the balance in his capital account after making necessary adjustments in respect of accumulated profits and losses and revaluation of assets and liabilities, etc., shall be treated as his share of goodwill (known as hidden goodwill). For example, P, Q and R are partners in a firm sharing profits in the ratio of 3:2:1. R retires, and the balance in his capital account after making necessary adjustments on account of reserves, revaluation of assets and liabilities workout to be Rs. 60,000, P and Q agreed to pay him Rs. 75,000 in full settlement of his claim. It implies that Rs. 15,000 is R's share of goodwill of the firm. This will be debits to the capital accounts of P and Q in their gaining ratio (3:2 assuming no change in their own profit sharing ratio) and crediting R's capital Account as follows:

| | | | *Rs.* | *Rs.* |
|---|---|---|---|---|
| | P's Capital A/c Dr.<br>Q's Capital A/c Dr.<br>To R's Capital A/c<br>(R's share of goodwill adjusted in P's and Q's capital accounts in their gaining ratio of 3:2) | | 9,000<br>6,000 | <br><br>15,000 |

**Test your Understanding – II**

Choose the correct option in the following questions:

1. On retirement/death of a partner, the retiring/deceased partner's capital account will be credited with
   (a) his/her share of goodwill.
   (b) goodwill of the firm.
   (c) shares of goodwill of remaining partners.
   (d) none of these.
2. Gobind, Hari and Pratap are partners. On retirement of Gobind, the goodwill already appears in the Balance Sheet at Rs. 24,000. The goodwill will be written-off
   (a) by debiting all partners' capital accounts in their old profit sharing ratio.
   (b) by debiting remaining partners' capital accounts in their new profit sharing ratio.
   (c) by debiting retiring partners' capital accounts from his share of goodwill.
   (d) none of these.
3. Chaman, Raman and Suman are partners sharing profits in the ratio of 5:3:2. Raman retires, the new profit sharing ratio between Chaman and Suman will be 1:1. The goodwill of the firm is valued at Rs. 1,00,000 Raman's share of goodwill will be adjusted
   (a) by debiting Chaman's Capital account and Suman's Capital Account with Rs 15,000 each.
   (b) by debiting Chaman's Capital account and Suman's Capital Account with Rs. 21,429 and 8,571 respectively.
   (c) by debiting only Suman's Capital Account with Rs. 30,000.
   (d) by debiting Raman's Capital account with Rs. 30,000.
4. On retirement/death of a partner, the remaining partner(s) who have gained due to change in profit sharing ratio should compensate the
   (a) retiring partners only.
   (b) remaining partners (who have sacrificed) as well as retiring partners.
   (c) remaining partners only (who have sacrificed).
   (d) none of these.

### 4.5 Adjustment for Revaluation of Assets and Liabilities

At the time of retirement or death of a partner there may be some assets which may not have been shown at their current values. Similarly, there may be certain liabilities which have been shown at a value different from the obligation to be met by the firm. Not only that, there may be some unrecorded assets and liabilities which need to be brought into books. As learnt in case of admission of a partner, a Revaluation Account is prepared in order to ascertain net gain (loss) on revaluation of assets and/or liabilities and bringing unrecorded items into firm's books and the same is transferred to the capital account of all partners including retiring/deceased partners in their old profit sharing ratio. the Journal entries to be passed for this purpose are as follows:

1. *For increase in the value of assets*

   Assets A/c's (Individually) Dr.
   To Revaluation A/c
   (Increase in the value of assets)

2. *For decrease in the value of assets*

   Revaluation A/c Dr.
   To Assets A/c's (Individually)
   (Decrease in the value of assets)

3. *For increase in the amount of liabilities*

   Revaluation A/c Dr.
   To Liabilities A/c (Individually)
   (Increase in the amount of liabilities)

4. *For decrease in the amount of liabilities*

   Liabilities A/c's (Individually) Dr.
   To Revaluation A/c
   (Decrease in the amount of liabilities)

5. *For an unrecorded asset*

   Assets A/c Dr.
   To Revaluation A/c
   (Unrecorded asset brought into book)

6. *For an unrecorded liability*

   Revaluation A/c Dr.
   To Liability A/c
   (Unrecorded liability brought into books)

7. *For distribution of profit or loss on revaluation*

   Revaluation A/c Dr.
   To All Partners' Capital A/c's (Individually)
   (Profit on revaluation transferred to partner's capital)

(or)

All Partners' Capital A/c's (Individually) Dr.
To Revaluation A/c
(Loss on revaluation transferred to partner's capital accounts)

***Illustration 10***

Mitali, Indu and Geeta are partners sharing profits and losses in the ratio of 5 : 3 : 2 respectively. On March 31, 2017, their Balance Sheet was as under:

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 55,000 | Goodwill | 25,000 |
| Reserve Fund | | 30,000 | Buildings | 1,00,000 |
| Capital Accounts: | | | Patents | 30,000 |
| Mitali | 1,50,000 | | Machinery | 1,50,000 |
| Indu | 1,25,000 | | Stock | 50,000 |
| Geeta | 75,000 | 3,50,000 | Debtors | 40,000 |
| | | | Cash | 40,000 |
| | | **4,35,000** | | **4,35,000** |

Geeta retires on the above date. It was agreed that Machinery be valued at Rs.1,40,000; Patents at Rs. 40,000; and Buildings at Rs. 1,25,000. Record the necessary journal entries and prepare the Revaluation Account.

***Solution***

**Books of Mitali and Indu**
**Journal**

| *Date 2017* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| Mar. 31 | Revaluation A/c | Dr. | | 10,000 | |
| | To Machinery A/c | | | | 10,000 |
| | (Decrease in the value of machinery) | | | | |
| | Patents A/c | Dr. | | 10,000 | |
| | Buildings A/c | Dr. | | 25,000 | |
| | To Revaluation A/c | | | | 35,000 |
| | (Increase in the value of patents and buildings) | | | | |
| | Revaluation A/c | Dr. | | 25,000 | |
| | To Mitali's Capital A/c | | | | 12,500 |
| | To Indu's Capital A/c | | | | 7,500 |
| | To Geeta's Capital A/c | | | | 5,000 |
| | (Profit on revaluation transferred to all partner's capital accounts in old profit sharing ratio) | | | | |

**Revaluation Account**

Dr. Cr.

| Liabilities | | Amount (Rs.) | Assets | Amount (Rs.) |
|---|---|---|---|---|
| Machinery | | 10,000 | Patents | 10,000 |
| Profit transferred to: | | | Buildings | 25,000 |
| Mitali's Capital A/c | 12,500 | | | |
| Indu's Capital A/c | 7,500 | | | |
| Geeta's Capital A/c | 5,000 | 25,000 | | |
| | | **35,000** | | **35,000** |

## 4.6 Adjustment of Accumulated Profits and Losses

Sometimes, the Balance Sheet of a firm may show accumulated profits in the form of general reserve on reserve fund and/on accumulated losses in the form of profit and loss account debit balance. The retiring/deceased partner is entitled to his/her share in the accumulated profits and is also liable to share the accumulated losses, if any. These accumulated profits or losses belong to all the partners and should be transferred to the capital accounts of all partners in their old profit sharing ratio. The following journal entries are recorded for the purpose.

(i) *For transfer of accumulated profits (reserves),*

Reserves A/c Dr.
  To All Partners' Capital A/c's (Individually)
(Reserves transferred to all partners' capital account's in old profit sharing ratio).

(ii) *For transfer of accumulated losses*

All Partners' Capital A/c's (Individually) Dr.
  To Profit and Loss A/c
(Accumulated loss transferred to all partners' capital accounts in their old profit-sharing ratio)

*For example;* Inder, Gajender and Harinder are partners sharing profits in the ratio of 3 : 2 : 1. Inder retires and the Balance Sheet of the firm on that date was as follows:

**Books of Inder, Gajinder and Harinder**
**Balance Sheet as on March 31, 2017**

| Liabilities | | Amount (Rs.) | Assets | Amount (Rs.) |
|---|---|---|---|---|
| Creditors | | 50,000 | Land and Building | 3,00,000 |
| General Reserve | | 90,000 | Stock | 30,000 |
| Capital Accounts: | | | Bank | 10,000 |
| Inder | 1,00,000 | | Cash | 5,000 |
| Gajender | 55,000 | | | |
| Harinder | 50,000 | 2,05,000 | | |
| | | **3,45,000** | | **3,45,000** |

The journal entry to record the treatment of general reserve will be as follows :

**Books of Gajender and Harinder**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| 2017 Mar. 31 | General Reserve A/c | Dr. | | 90,000 | |
| | To Inder's Capital A/c | | | | 45,000 |
| | To Gajender's Capital A/c | | | | 30,000 |
| | To Harinder's Capital A/c | | | | 15,000 |
| | (General Reserves transferred to all partners' capital accounts in the old ratio on Inder's retirement) | | | | |

## 4.7 Disposal of Amount Due to Retiring Partner

The outgoing partner's account is settled as per the terms of partnership deed i.e., in lumpsum immediately or in various instalments with or without interest as agreed or partly in cash immediately and partly in installment at the agreed intervals. In the absence of any agreement, Section 37 of the Indian Partnership Act, 1932 is applicable, which states that the outgoing partner has an option to receive either interest @ 6% p.a. till the date of payment or such share of profits which has been earned with his/her money (i.e., based on capital ratio). Hence, the total amount due to the retiring partner which is ascertained after all adjustments have been made is to be paid immediately to the retiring partner. In case the firm is not in a position to make the payment immediately, the amount due is transferred to the retiring Partner's Loan Account, and as and when the amount is paid it is debited to his account. The necessary journal entries recorded are as follows.

1. *When retiring partner is paid cash in full.*

   Retiring Partner's Capital A/c Dr.
   To Cash/Bank A/c

2. *When retiring partner's whole amount is treated as loan.*

   Retiring Partner's Capital A/c Dr.
   To Retiring Partner's Loan A/c

3. *When retiring partner is partly paid in cash and the remaining amount treated as loan.*

   Retiring Partner's Capital A/c Dr. (Total Amount due)
   To Cash/Bank A/c (Amount Paid)
   To Retiring Partner's Loan A/c (Amount of Loan)

4. When Loan account is settled by paying in instalment includes principal and interest.
   a) For interest on loan
      Interest A/c Dr.
        To Retiring Partner's Loan A/c
   b) For payment of instalment
      Retiring Partner's Loan A/c Dr.
        To Cash/Bank A/c

*Note:*
1. The balance of the retiring partner's loan account is shown on the liabilities side of the Balance Sheet till the last instalment is paid to him/her.
2. Entry number (a) and (b), above will be repeated till the loan is paid off.

### *Illustration 11*

Amrinder, Mahinder and Joginder are partners in a firm. Mahinder retires from the firm. On his date of retirement, Rs. 60,000 becomes due to him. Amrinder and Joginder promise to pay him in instalments every year at the end of the year. Prepare Mahinder's Loan Account in the following cases:
1. When payment is made four yearly instalments plus interest @ 12% p.a. on the unpaid balance.
2. When they agree to pay three yearly instalments of Rs. 20,000 including interest @ 12% p.a on the outstanding balance during the first three years and the balance including interest in the fourth year.
3. When payment is made in 4 equal yearly instalment's including interest @ 12% p.a. on the unpaid balance.

### *Solution*

(a) When payment is made in four yearly instalments plus interest

**Books of Amrinder and Joginder**
**Mahinder's Loan Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Year-I | Bank (15,000+7,200) | | 22,200 | Year-1 | Mahinder Capital | | 60,000 |
| | | | | | Interest | | 7,200 |
| | Balance c/d | | 45,000 | | | | |
| | | | **67,200** | | | | **67,200** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Year-II | Bank (15,000+5,400) | | 20,400 | Year-II | Balance b/d | | 45,000 |
| | | | | | Interest | | 5,400 |
| | Balance c/d | | 30,000 | | | | |
| | | | **50,400** | | | | **50,400** |
| Year-III | Bank (15,000+3,600) | | 18,600 | Year-III | Balance b/d | | 30,000 |
| | | | | | Interest | | 3,600 |
| | Balance c/d | | 15,000 | | | | |
| | | | **33,600** | | | | **33,600** |
| Year-IV | Bank (15,000+1,800) | | 16,800 | Year-IV | Balance b/d | | 15,000 |
| | | | | | Interest | | 1,800 |
| | | | **16,800** | | | | **16,800** |

(b) When payment is made in three yearly installments of Rs. 20,000 each including interest.

**Books of Amrinder, Mahinder and Joginder**
**Mahinder's Loan Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Year-I | Bank | | 20,000 | Year-I | Mohan's Capital | | 60,000 |
| | Balance c/d | | 47,200 | | Interest | | 7,200 |
| | | | **67,200** | | | | **67,200** |
| Year-II | Bank | | 20,000 | Year-II | Balance b/d | | 47,200 |
| | Balance c/d | | 32,864 | | Interest | | 5,664 |
| | | | **52,864** | | | | **52,864** |
| Year-III | Bank | | 20,000 | Year-III | Balance b/d | | 32,864 |
| | Balance c/d | | 16,808 | | Interest | | 3,944 |
| | | | **36,808** | | | | **36,808** |
| Year-IV | Bank | | 18,825 | Year-IV | Balance b/d | | 16,808 |
| | | | | | Interest | | 2,017 |
| | | | **18,825** | | | | **18,825** |

(c) When payment is made in four equal yearly instalments including interest @12% (Annually).

**Books of Amrinder and Joginder**
**Mahinder's Loan Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| Year-I | Bank | | 19,754 | Year-I | Mohinder's Capital | | 60,000 |
| | Balance c/d | | 47,446 | | Interest | | 7,200 |
| | | | **67,200** | | | | **67,200** |
| Year-II | Bank | | 19,754 | Year-II | Balance b/d | | 47,446 |
| | Balance c/d | | 33,386 | | Interest | | 5,694 |
| | | | **53,140** | | | | **53,140** |
| Year-III | Bank | | 19,754 | Year-III | Balance b/d | | 33,386 |
| | Balance c/d | | 17,638 | | Interest | | 4,006 |
| | | | **37,392** | | | | **37,392** |
| Year-IV | Bank | | 19,754 | Year-IV | Balance b/d | | 17,638 |
| | | | | | Interest | | 2,116 |
| | | | **19,754** | | | | **19,754** |

*Note:* The annual instalment of payment in 4 years @ 12% interest works out at Rs. 19,754 (Annually of Rs. 0.329234 as per Annually Table x 60,000).

It may noted that the accounting treatment for disposal of amount due to retiring partner and deceased partner is similar with a difference that in case of death of a partner, the amount credited to him/her is transferred to his Executors' Account and the payment has to be made to him/her. This shall be taken up later in this chapter.

**Do it Yourself**

Vijay, Ajay and Mohan are friends. They passed B. Com. (Hons) from Delhi University in June, 2016. They decided to start the business of computer hardware.

On Ist of August, 2016, they introduced the capital of Rs. 50,000, Rs. 30,000 and Rs. 20,000 respectively and started the business in partnership at Delhi. The profit sharing ratio decided between there was 4:2:1. The business was running successfully. But on Ist February, 2017, due to certain unavoidable circumstances and family circumstances, Ajay decided to settle in Pune and decided to retire from the partnership on 31st March, 2017; with the consent of partners, Ajay retires as on 31st March, 2017, the position of assets and liabilities are as follows:

*Contd...*

*Contd...*

**Balance Sheet of Vijay, Ajay and Mohan as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capital Accounts : | | | Goodwill | 56,000 |
| Vijay | 1,80,000 | | Stock | 90,000 |
| Ajay | 1,20,000 | | Debtors | 66,000 |
| Mohan | 1,00,000 | 4,00,000 | Land and Buildings | 1,20,000 |
| Bills Payable | | 12,000 | Machinery | 1,59,000 |
| General Reserve | | 42,000 | Motor Van | 31,000 |
| Creditors | | 90,000 | Cash at bank | 22,000 |
| | | **5,44,000** | | **5,44,000** |

On the date of retirement, the following adjustments were to be made:

1. Firm's goodwill was valued at Rs. 1,48,000.
2. Assets and Liabilities are to be valued as under: Stock Rs. 72,000; Land and Buildings Rs. 1,35,600; Debtors Rs. 63,000; Machinery Rs. 1,50,000; Creditors Rs. 84,000.
3. Vijay to bring Rs. 1,20,000 and Mohan Rs. 30,000 as additional capital.
4. Ajay was to be paid Rs. 97,200 in cash and the balance of his Capital Account to be transferred to his Loan Account Work out the amount due to Ajay and state as to how will you settle his account ?

### *Illustration 12*

The Balance Sheet of Ashish, Suresh and Lokesh who were sharing profits in the ratio of 5 : 3 : 2, is given below as on March 31, 2017.

**Balance Sheet of Ashish, Suresh and Lokesh As on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capitals: | | | Land | 4,00,000 |
| Shyam | 7,20,000 | | Building | 3,80,000 |
| Gagan | 4,15,000 | | Plant & Machinery | 4,65,000 |
| Ram | 3,45,000 | 14,80,000 | Furniture & Fittings | 77,000 |
| Reserve Fund | | 1,80,000 | Stock | 1,85,000 |
| Sundry Creditors | | 1,24,000 | Sundry Debtors | 1,72,000 |
| Outstanding Expresses | | 16,000 | Cash in hand | 1,21,000 |
| | | **18,00,000** | | **18,00,000** |

Suresh retires on the above date and the following adjustments are agreed upon his retirement.

1. Stock was valued at Rs. 1,72,000.
2. Furniture and fittings were valued at Rs. 80,000.

3. An amount of Rs. 10,000 due from Mr. Deepak, a debtor, was doubtful and a provision for the same was required.
4. Goodwill of the firm was valued at Rs. 2,00,000 but it was decided not to show goodwill in the books of accounts.
5. Suresh was paid Rs. 40,000 immediately on retirement and the balance was transferred to his loan account.
6. Ashish and Lokesh were to share future profits in the ratio of 3:2.

   Prepare Revaluation Account, Capital Account and Balance Sheet of the reconstituted firm.

### Solution

**Books of Ashish, Suresh and Lokesh**
**Revaluation Account**

*Dr.* *Cr.*

| *Particulars* | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Stock | 13,000 | Furniture | | 3,000 |
| Provision for Doubtful Debt | 10,000 | (Loss on Revaluation transferred to : | | |
| | | Ashish's capital | 10,000 | |
| | | Suresh's capital | 6,000 | |
| | | Lokesh's capital | 4,000 | 20,000 |
| | **23,000** | | | **23,000** |

**Partners' Capital Accounts**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Ashish (Rs.)* | *Suresh (Rs.)* | *Lokesh (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Ashish (Rs.)* | *Suresh (Rs.)* | *Lokesh (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mar.31 | Revaluation (Loss) | | 10,000 | 6,000 | 4,000 | Mar.31 | Bal. b/d | | 7,20,000 | 4,15,000 | 3,45,000 |
| | Suresh's Capital | | 20,000 | | 40,000 | | Reserve fund | | 90,000 | 54,000 | 36,000 |
| | Cash | | | 40,000 | | | Ashish's Capital | | | 20,000 | |
| | Suresh's Loan | | | 4,83,000 | | | Lokesh's Capital | | | 40,000 | |
| | Balance c/d | | 7,80,000 | | 3,37,000 | | | | | | |
| | | | **8,10,000** | **5,29,000** | **3,81,000** | | | | **8,10,000** | **5,29,000** | **3,81,000** |

**Balance Sheet of Ashish and Lokesh as on April 01, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Capitals : | | | Land | | 4,00,000 |
| Ashish | 7,80,000 | | Buildings | | 3,80,000 |
| Lokesh | 3,37,000 | 11,17,000 | Plant and Machinery | | 4,65,000 |
| Suresh's Loan | | 4,83,000 | Furniture | | 80,000 |
| Sundry Creditors | | 1,24,000 | Stock | | 1,72,000 |
| Outstanding Expresses | | 16,000 | Sundry Debtors | 1,72,000 | |
| | | | *Less:* Provision for | | |
| | | | Doubtful Debts | 10,000 | 1,62,000 |
| | | | Cash (Rs. 1,21,000–Rs. 40,000) | | 81,000 |
| | | **17,40,000** | | | **17,40,000** |

*Working Notes*

1. Gaining Share = New Share – Old Share

   Ashish's Gain $= \frac{3}{5} - \frac{5}{10} = \frac{6-5}{10} = \frac{1}{10}$

   Lokesh's Gain $= \frac{2}{5} - \frac{2}{10} = \frac{4-2}{10} = \frac{2}{10}$

   Gaining Ratio between Ashish and Lokesh = 1 : 2,

2. Suresh's Share of Goodwill $= \frac{3}{10} \times$ Rs. 2,00,000 = Rs. 60,000

### *Illustration 13*

Shyam, Gagan and Ram are partners sharing profit in the ratio of 2 : 2 : 1. Their Balance Sheet as on March 31, 2017 are as under:

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 49,000 | Cash | 8,000 |
| Reserves | | 14,500 | Debtors | 19,000 |
| Capital: | | | Stock | 42,000 |
| Shyam | 80,000 | | Machinery | 85,000 |
| Gagan | 62,500 | | Building | 1,22,000 |
| Ram | 75,000 | 2,17,500 | Patents | 9,000 |
| Employees' Provident Fund | | 4,000 | | |
| | | **2,85,000** | | **2,85,000** |

As Gagan got a very good break at an MNC, so he decided to retire on that date and it was decided that Shyam and Ram would share the future profits in the ratio of 5 : 3. Goodwill was valued at Rs. 70,000; Machinery at Rs. 78,000; Buildings at Rs. 1,52,000; stock at Rs. 30,000; and bad debts amounting to Rs. 1,550 were to be written off. Record journal entries in the books of the firm and prepare the Balance Sheet of the new firm.

***Solution***

**Books of Shyam, Ram and Gagan**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| 2017 Mar. 31 | Revaluation A/c Dr. | | 20,550 | |
| | To Machinery A/c | | | 7,000 |
| | To Stock A/c | | | 12,000 |
| | To Debtors A/c | | | 1,550 |
| | (Loss on revaluation of assets recorded on Gagan's retirement) | | | |
| | Building A/c Dr. | | 30,000 | |
| | To Revaluation A/c | | | 30,000 |
| | (Appreciation in the value of Building on Gagan's retirement) | | | |
| | Revaluation A/c Dr. | | 9,450 | |
| | To Shyam's Capital A/c | | | 3,780 |
| | To Gagan's Capital A/c | | | 3,780 |
| | To Ram's Capital A/c | | | 1,890 |
| | (Profit on revaluation transferred to partners' capital accounts in the ratio of 2 : 2 : 1) | | | |
| | Reserve A/c Dr. | | 14,500 | |
| | To Shyam's Capital A/c | | | 5,800 |
| | To Gagan's Capital A/c | | | 5,800 |
| | To Ram's Capital A/c | | | 2,900 |
| | (Reserve transferred to partner's capital accounts) | | | |
| | Shyam's Capital A/c Dr. | | 15,750 | |
| | Ram's Capital A/c Dr. | | 12,250 | |
| | To Gagan's Capital A/c | | | 28,000 |
| | (Gagan's share of goodwill adjusted to Shyam and Ram in their gaining ratio of 9 : 7) | | | |
| | Gagan's Capital A/c Dr. | | 1,00,080 | |
| | To Gagan's Loan A/c | | | 1,00,080 |
| | (Amount payable to retiring partner transferred to his loan account) | | | |

**Balance Sheet of Shyam and Ram as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 49,000 | Cash | 8,000 |
| Employees' Provident Fund | | 4,000 | Debtors | 17,450 |
| Capitals : | | | Stock | 30,000 |
| Shyam | 73,830 | | Machinery | 78,000 |
| Ram | 67,540 | 1,41,370 | Building | 1,52,000 |
| Gagan's Loan | | 1,00,080 | Patents | 9,000 |
| | | **2,94,450** | | **2,94,450** |

*Working Notes*

Share Gained = New Share – Old Share

Shyam's Gain $= \frac{5}{8} \quad \frac{2}{5} \quad \frac{25 \quad 16}{40} \quad \frac{9}{40}$

Ram's Gain $= \frac{3}{8} \quad \frac{1}{5} \quad \frac{15 \quad 8}{40} \quad \frac{7}{40}$

Therefore, Gaining Ratio of Shyam and Ram = 9 : 7.

**Revaluation Account**

*Dr.* *Cr.*

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Machinery | | 7,000 | Building | 30,000 |
| Stock | | 12,000 | | |
| Debtors | | 1,550 | | |
| (Profit on Revaluation) | | | | |
| Transfer to Capital | | | | |
| Shyam | 3,780 | | | |
| Gagan | 3,780 | 9,450 | | |
| Ram | 1,890 | **30,000** | | **30,000** |

**Partners' Capital Accounts**

| *Date 2017* | *Particulars* | *J.F.* | *Shyam (Rs.)* | *Gagan (Rs.)* | *Ram (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Shyam (Rs.)* | *Gagan (Rs.)* | *Ram (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mar.31 | Gagan's Capital | | 15,750 | | 12,250 | Mar.31 | Bal. b/d | | 80,000 | 62,500 | 75,000 |
| | Gagan's Loan | | | 1,00,080 | | | Revaluation | | 3,780 | 3,780 | 1,890 |
| | Bal. c/d | | 73,830 | | 67,540 | | Profit Reserve | | 5,800 | 5,800 | 2,900 |
| | | | | | | | Shyam's Capital | | | 15,750 | |
| | | | | | | | Ram's Capital | | | 12,250 | |
| | | | **89,580** | **1,00,080** | **79,790** | | | | **89,580** | **1,00,080** | **79,790** |

*Note:* As sufficient balance is not available to pay the due amount to Gagan, the balance in his capital account is transferred to his loan account.

### 4.8 Adjustment of Partners' Capitals

At the time of retirement or death of a partner, the remaining partners may decide to adjust their capital contributions in their profit sharing ratio. In such a situation, the sum of balances in the capitals of continuing partners may be treated as the total capital of the new firm, unless specified otherwise. Then, to ascertain the new capital of the continuing partners, the total capital of the firm is divided amongst the remaining partners as per the new profit sharing ratio, and the excess or deficiency of capital in the individual capital account's may be worked out. Such excess or shortage shall be adjusted by withdrawal of contribution in cash, as the case may be, for which the following journal entries will be recorded.

(i) For excess capital withdrawn by the partner :

| | |
|---|---|
| Partners' Capital A/c | Dr. |
| To Cash / Bank A/c | |

(ii) For amount of capital to be brought in by the partner:

| | |
|---|---|
| Cash / Bank A/c | Dr. |
| To Partners' Capital A/c | |

Consider the following situations:
The adjustment of the continuing partner's capitals may involve any one of the three ways as illustrated as follows :

1. When the capital of the new firm as decided by the partners is specified.

### *Illustration 14*

Mohit, Neeraj and Sohan are partners in a firm sharing profits in the ratio of 2 : 1 : 1. Neeraj retires and Mohit and Sohan decided that the capital of the new firm will be fixed at Rs. 1,20,000. The capital accounts of Mohit and Sohan show a credit balance of Rs. 82,000 and Rs. 41,000 respectively after making all the adjustments. Calculate the actual cash to be paid off or to be brought in by the continuing partners and pass the necessary journal entries.

### *Solution*

The New Profit Sharing Ratio between Mohit and Sohan = 2 : 1

| | *Mohit* | *Sohan* |
|---|---|---|
| New Capital based new ratio is | 80,000 | 40,000 |
| Existing Capital (after adjustments) is | 82,000 | 41,000 |
| Cash to be brought in on (Paid off) | 2,000 | 1,000 |

**Books of Mohit and Sohan**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| | Mohit's Capital A/c | Dr. | | 2,000 | |
| | Sohan's Capital A/c | Dr. | | 1,000 | |
| | To Cash A/c | | | | 3,000 |
| | (Excess capital withdrawn by Sohan) | | | | |

2. When the total capital of new firm is not specified.

### *Illustration 15*

Asha, Deepa and Lata are partners in a firm sharing profits in the ratio of 3 : 2 : 1. Deepa retires. After making all adjustments relating to revaluation, goodwill and accumulated profit etc., the capital accounts of Asha and Lata showed a credit balance of Rs. 1,60,000 and Rs. 80,000 respectively. It was decided to adjust the capitals of Asha and Lata in their new profit sharing ratio. You are required to calculate the new capitals of the partners and record necessary journal entries for bringing in or withdrawal of the necessary amounts involved.

### *Solution*

a. Calculation of new capitals of the existinging partners

| | | |
|---|---|---|
| Balance in Asha's Capital (after all adjustments) | = | 1,60,000 |
| Balance in Lata's Capital | = | 80,000 |
| Total Capital of the New Firm | = | 2,40,000 |

Based on the new profit sharing ratio of 3:1

Asha's New Capital = Rs. 2,40,000 $\times \frac{3}{4}$ = 1,80,000

Lata's New Capital = Rs. 2,40,000 $\times \frac{1}{4}$ = 60,000

*Note :The total capital of the new firm is based on the sum of the balance in the capital accounts of the continuing partners.*

b. Calculation of cash to be brought in or withdrawn by the continuing partners :

| | Asha (Rs.) | Lata (Rs.) |
|---|---|---|
| New Capitals | 1,80,000 | 60,000 |
| Existing Capitals | 1,60,000 | 80,000 |
| c. Cash to be brought in on (paid off) | 20,000 | 20,000 |

**Books of Asha and Lata**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| | Cash A/c Dr.<br>To Asha Capital A/c<br>(Cash brought by Asha) | | 20,000 | <br>20,000 |
| | Lata's Capital A/c Dr.<br>To Cash A/c<br>(Surplus capital withdrawn by Lata) | | 20,000 | <br>20,000 |

3. When the amount payable to retiring partner will be contributed by continuing partners in such a way that their capitals are adjusted proportionate to their new profit sharing ratio:

### *Illustration 16*

Lalit, Pankaj and Rahul are partners sharing profits in the ratio of 4 : 3 : 3. After all adjustments, on Lalit's retirement with respect to general reserve, goodwill and revaluation etc., the balances in their capital accounts stood at Rs. 70,000, Rs. 60,000 and Rs. 50,000 respectively. It was decided that the amount payable to Lalit will be brought by Pankaj and Rahul in such a way as to make their capitals proportionate to their profit sharing ratio. Calculate the amount to be brought by Pankaj and Rahul and record necessary journal entries for the same. Also record necessary entry for payment to Lalit.

After Lalit's retirement, the new profit sharing ratio between Pankaj and Rahul is 3 : 3, i.e. 1 : 1.

### *Solution*

a. *Calculation of total capital of the new firm*

| | | |
|---|---|---|
| Balance in Pankaj's Capital account (after adjustment) | = | 60,000 |
| Balance in Rahul's Capital account (after adjustment) | = | 50,000 |
| Amount payable to Lalit (Retiring partner) | = | 70,000 |
| Total capital of new firm (i) + (ii) + (iii) | = | 1,80,000 |

b. *Calculation of new capitals of the continuing partners*

Pankaj's New Capital $= \text{Rs. } 1,80,000 \times \frac{1}{2}$ = Rs. 90,000

Rahul's New Capital $= \text{Rs. } 1,80,000 \times \frac{1}{2}$ = Rs. 90,000

c. *Calculation of the amounts to be brought in or withdrawn by the continuing partners*

| | *Pankaj (Rs.)* | *Rahul (Rs.)* |
|---|---|---|
| New Capital (Rs. 1,80,000 in the ratio of 1 : 1) | 90,000 | 90,000 |
| Existing capital (after adjustment) | 60,000 | 50,000 |
| Cash to be brought in | 30,000 | 40,000 |

**Books of Pankaj and Rahul**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Cash A/c | Dr. | 70,000 | |
| | To Pankaj's Capital A/c | | | 30,000 |
| | To Rahul's Capital A/c | | | 40,000 |
| | (Amounts brought by Pankaj and Rahul) | | | |
| | Lalit's Capital A/c | Dr. | 70,000 | |
| | To Cash A/c | | | 70,000 |
| | (Amount paid to Lalit on retirement) | | | |

### *Illustration 17*

The Balance Sheet of Mohit, Neeraj and Sohan who are partners in a firm sharing profits according to their capitals as on March 31, 2017 was as under:

| *Liabilities* | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | 21,000 | Buildings | | 1,00,000 |
| Mohit's Capital | 80,000 | Machinery | | 50,000 |
| Neeraj's Capital | 40,000 | Stock | | 18,000 |
| Sohan's Capital | 40,000 | Debtors | 20,000 | |
| General Reserve | 20,000 | *Less:* Provision for Bad Debt | 1,000 | 19,000 |
| | | Cash at bank | | 14,000 |
| | **2,01,000** | | | **2,01,000** |

On that date, Neeraj decided to retire from the firm and was paid for his share in the firm subject to the following:

1. Buildings to be appreciated by 20%.
2. Provision for Bad debts to be increased to 15% on Debtors.
3. Machinery to be depreciated by 20%.
4. Goodwill of the firm is valued at Rs. 72,000 and the retiring partner's share is adjusted through the capital accounts of remaining partners.

5. The capital of the new firm be fixed at Rs. 1,20,000.

Prepare Revaluation Account, Capital Accounts of the partners, and the Balance Sheet after retirement of B.

***Solution***

**Revaluation Account**

Dr. Cr.

| *Particulars* | | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|---|
| Provision for Doubtful Debt | | 2,000 | Building | 20,000 |
| Machinery | | 10,000 | | |
| Capital (Profit on Revaluation) | | | | |
| Mohit | 4,000 | | | |
| Neeraj | 2,000 | | | |
| Sohan | 2,000 | 8,000 | | |
| | | **20,000** | | **20,000** |

**Partners' Capital Accounts**

Dr. Cr.

| *Date 2017* | *Particulars* | *J.F.* | *Mohit (Rs.)* | *Neeraj (Rs.)* | *Sohan (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Mohit (Rs.)* | *Neeraj (Rs.)* | *Sohan (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mar.31 | Neeraj's Capital | | 12,000 | | 6,000 | Mar.31 | Bal. b/d | | 80,000 | 40,000 | 40,000 |
| | Balance c/d | | 82,000 | 65,000 | 41,000 | | General Reserve | | 10,000 | 5,000 | 5,000 |
| | | | | | | | Revaluation (Profit) | | 4,000 | 2,000 | 2,000 |
| | | | | | | | Mohit's Capital | | | 12,000 | |
| | | | | | | | Sohan's Capital | | | 6,000 | |
| | | | **94,000** | **65,000** | **47,000** | | | | **94,000** | **65,000** | **47,000** |
| | Bank | | | 65,000 | | | Bal. b/d | | 82,000 | 65,000 | 41,000 |
| | Bank | | 2,000 | | 1,000 | | | | | | |
| | Bal. c/d (1) | | 80,000 | | 40,000 | | | | | | |
| | | | **82,000** | **65,000** | **41,000** | | | | **82,000** | **65,000** | **41,000** |

**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Creditors | | 21,000 | Building | | 1,20,000 |
| Bank overdraft | | 54,000 | Machinery | | 40,000 |
| Capital | | | Stock | | 18,000 |
| Mohit | 80,000 | | Debtors | 20,000 | |
| Sohan | 40,000 | 1,20,000 | *Less:* Provision for Doubtful Debts (1,000+2,000) | 3,000 | 17,000 |
| | | **1,95,000** | | | **1,95,000** |

*Working Notes*

1. **Bank Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 14,000 | | Mohit's Capital | | 2,000 |
| | Balance c/d | | 54,000 | | Sohan's Capital | | 1,000 |
| | (overdraft) | | | | Neeraj's Capital | | 65,000 |
| | | | **68,000** | | | | **68,000** |

2. It is assumed that bank overdraft is taken to pay the retiring partners.
3. Cash to be brought in or withdrawn by Mohit and Sohan :

| | | *Mohit (Rs.)* | *Sohan (Rs.)* |
|---|---|---|---|
| (a) | New capitals (Rs.1,20,000 in the ratio of 2:1) | 80,000 | 40,000 |
| (b) | Existing capital (after adjustments) as calculated | 82,000 | 41,000 |
| | Cash to be brought (paid off) | 2,000 | 1,000 |

**Do it Yourself**

1. The Balance Sheet of A, B and C who were sharing the profits in proportion to their capitals stood as on March 31, 2017.

**Balance Sheet as on March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Bills Payable | 6,250 | Land and Building | | 12,000 |
| Sundry Creditors | 10,000 | Debtors | 10,500 | |
| Reserve Fund | 2,750 | *Less* Provision | 500 | 10,000 |
| Capitals | | for bad debts | | |
| A 20,000 | | Bill receivables | | 7,000 |
| B 15,000 | | Stock | | 15,500 |
| C 15,000 | 50,000 | Plant and Machinery | | 11,500 |
| | | Cash at bank | | 13,000 |
| | 69,000 | | | 69,000 |

B retired on the date of Balance Sheet and the following adjustments were to be made:
(a) Stock was depreciated by 10%.
(b) Factory building was appreciated by 12%.
(c) Provision for doubtful debts to be created up to 5%.
(d) Provision for legal charges to be made at Rs.265.
(e) The goodwill of the firm to be fixed at Rs.10,000.
(f) The capital of the new firm to be fixed at Rs.30,000. The continuing partners decide to keep their capitals in the new profit sharing ratio of 3:2.

Work out the final balances in capital accounts of the firm, and the amounts to be brought in and/or withdrawn by A and C to make their capitals proportionate to then new profit sharing ratio.

2. R, S and M were carrying on business in partnership sharing profits in the ratio of 3:2:1, respectively. On March 31, 2017, Balance Sheet of the firm stood as follows :

**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 16,000 | Building | 23,000 |
| Capitals: | | | Debtors | 7,000 |
| R | 20,000 | | Stock | 12,000 |
| S | 7,500 | | Patents | 8,000 |
| M | 12,500 | 40,000 | Bank | 6,000 |
| | | **56,000** | | **56,000** |

Shyam retired on the above mentioned date on the following terms :
(a) Buildings to be appreciated by Rs.8,800.
(b) Provision for doubtful debts to be made @ 5% on debtors.
(c) Goodwill of the firm to be valued at Rs.9,000.
(d) Rs.5,000 to be paid to S immediately and the balance due to him to be treated as a loan carrying interest @ 6% per annum.

Prepare the balance sheet of the reconstituted firm.

### 4.9 Death of a Partner

As stated earlier, the accounting treatment in the event of death of a partner is similar to that in case of retirement of a partner, and that in case of death of a partner his claim is transferred to his executors and settled in the same manner as that of the retired partner. However, there is one major difference that, while the retirement normally takes place at the end of an accounting period, the death of a partner may occur any time. Hence, in case of a partner, his claim shall also include his share of profit or loss, interest on capital, interest on drawings (if any) from the date of the last Balance Sheet to the date of his death of these, the main problem relates to the calculation of profit for the intervening period (i.e., the period from date of the last balance sheet and the date of the partner's death. Since, it is considered cumbersome to close the books and prepare final account, for the period, the deceased partner's share of profit may be calculated on the basis of last year's profit (or average of past few years) or on the basis of sales.

For example, Bakul, Champak and Darshan were partners in a firm sharing profits in the ratio of 5:4:1. The profit of the firm for the year ending on March 31, 2017 was Rs.1,00,000. Champak dies on June 30, 2017. Champak's share of profit for the period from April 1 to June 30, 2017, shall be calculated as follows:

Total profit for the year ending on 31st March, 2017 = Rs.1,00,000

Champak's share of profit :

Proceeding Year's Profit × Proportionate Period × Share of Deceased Partner

$$= \text{Rs. } 1{,}00{,}000 \times \frac{3}{12} \times \frac{4}{10} = \text{Rs. } 10{,}000$$

The journal entry will be recorded as follows :

| | | | |
|---|---|---|---|
| Profit & Loss Suspense A/c | Dr. | 10,000 | |
| To Champak's Capital A/c | | | 10,000 |
| (Champak's share of profit transferred to his capital account) | | | |

Alternatively, if Champak's share of profit was to be calculated on the basis of average profits of the last three years, which were Rs. 1,36,000 for 2014-15, Rs. 1,54,000 for 2015-16 and Rs. 1,00,000 for 2016-17; Champahs share of profit for the period from April 7, 2017 to June 30, 2017 shall be calculated on the basis of average profit based on profits for the last year calculation as follows:

$$\text{Average Profit} = \frac{\text{Total Profit}}{\text{No. of years}} = \frac{\text{Rs. } 1{,}36{,}000 + \text{Rs. } 1{,}54{,}000 + \text{Rs. } 1{,}00{,}000}{3}$$

$$= \frac{\text{Rs. } 3{,}90{,}000}{3} = \text{Rs. } 1{,}30{,}000$$

$$\text{Champak's share of profit} = \text{Rs. } 1{,}30{,}000 \times \frac{3 \text{ months}}{12 \text{ months}} \times \frac{4}{10}$$

$$= \text{Rs. } 13{,}000$$

In case, the agreement provides, that share of profit of the deceased partner will be worked out on the basis of sales, and it is specified that the sales during the year 2015-16 were Rs. 8,00,000 and the sales from April 1, 2017 to June

30, 2017 were Rs. 1,50,000 Champak's share of profits for the period from April 1, 2017 to June 30, 2017 shall be calculated as follows.

If sale is Rs.8,00,000, the profit = Rs.1,00,000

If sale is Rs.1, the profit $= \dfrac{1,00,000}{8,00,000}$

If sale is Rs.1,50,000, the profit $= \dfrac{1,00,000}{8,00,000} \times 1,50,000$

= Rs. 18,750

Champak's share of profit = Rs. 7,500

For being deceased partner's share of profits for the intervening period to books of account, the following journal entry is recorded.

**Profit and Loss Account**

Profit and Loss (Supense) A/c Dr.
To Deceased Partner's Capital A/c
(Share of profit for the intervening period)

***Illustration 18***

Anil, Bhanu and Chandu were partners in a firm sharing profits in the ratio of 5:3:2. On March 31, 2017, their Balance Sheet was as under:

**Books of Anil, Bhanu and Chandu**
**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 11,000 | Buildings | 20,000 |
| Reserve Fund | | 6,000 | Machinery | 30,000 |
| Anil's Capital | 30,000 | | Stock | 10,000 |
| Bhanu's Capital | 25,000 | | Patents | 11,000 |
| Chandu's Capital | 15,000 | 70,000 | Debtors | 8,000 |
| | | | Cash | 8,000 |
| | | **87,000** | | **87,000** |

Anil died on October 1, 2017. It was agreed between his executors and the remaining partners that :

(a) Goodwill to be valued at $2\frac{1}{2}$ year's purchase of the average profits of the previous four years which were :

Year 2013-14 – Rs.13,000, Year 2014-15 – Rs. 12,000,
Year 2015-16 – Rs.20,000, Year 2016-17 – Rs.15,000

(b) Patents be valued at Rs.8,000; Machinery at Rs.28,000; and Building at Rs.25,000.
(c) Profit for the year 2017-18 be taken as having accrued at the same rate as that of the previous year.
(d) Interest on capital be provided at 10% p.a.
(e) Half of the amount due to Anil be paid immediately.

Prepare Anil's Capital Account and Anil's Executor's Account as on October 1, 2017.

### Solution

**Books of Anil, Bhanu and Chander**
**Anil's Capital Account**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Oct.1 | Anil's Executors | | 57,000 | April,1 | Balance b/d | | 30,000 |
| | | | | Oct. 1 | Reserve Fund | | 3,000 |
| | | | | | Bhanu's Capital | | 11,250 |
| | | | | | Chandu's Capital | | 7,500 |
| | | | | | Profit & Loss (Suspense) | | 3,750 |
| | | | | | Interest on Capital | | 1,500 |
| | | | **57,000** | | | | **57,000** |

**Anil's Executor's Account**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| Oct.1 | Bank | | 28,500 | Oct.1 | Anil's Capital | | 57,000 |
| | Balance c/d | | 28,500 | | | | |
| | | | **57,000** | | | | **57,000** |

*Working Notes*

1. **Revaluation Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Patents | | 3,000 | | Building | | 5,000 |
| | Machinery | | 2,000 | | | | |
| | | | **5,000** | | | | **5,000** |

2. Goodwill = 2½ years' purchase × Average Profit

$$\text{Average Profit} = \frac{\text{Rs. }13{,}000 + \text{Rs.}12{,}000 + \text{Rs.}20{,}000 + \text{Rs.}15{,}000}{4}$$

$$= \frac{\text{Rs. } 60{,}000}{4} = \text{Rs. } 15{,}000$$

$$\text{Goodwill} = \frac{5}{2} \times \text{Rs. } 15{,}000$$
$$= \text{Rs. } 37{,}500$$

$$\text{Anil's Share of Goodwill} = \frac{5}{10} \times \text{Rs. } 37{,}500$$
$$= \text{Rs. } 18{,}750$$

3. Profit from the date of last balance sheet to date of death (April 1, 2017 to October 1, 2017) = 6 months

$$\text{Profit for 6 months} = \text{Rs. } 15{,}000 \times \frac{6}{12} = \text{Rs. } 7{,}500$$

$$\text{Anil's share of profit} = \text{Rs. } 7{,}500 \times \frac{5}{10} = \text{Rs. } 3{,}750$$

4. Interest on Capital (April 1, 2017 to October 1, 2017)

$$= \text{Rs. } 30{,}000 \times \frac{10}{100} \times \frac{6}{12}$$
$$= \text{Rs. } 1{,}500$$

### *Illustration 19*

You are given the Balance Sheet of Mohit, Sohan and Rahul who are partners sharing profits in the ratio of 2 : 2 : 1, as on March 31, 2017.

**Books of Mohit, Sohan and Rahul**
**Balance Sheet as on March 31, 2017.**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 40,000 | Goodwill | 30,000 |
| Reserve Fund | | 25,000 | Fixed assets | 60,000 |
| Capitals: | | | Stock | 10,000 |
| Mohit | 30,000 | | Sundry Debtors | 20,000 |
| Sohan | 25,000 | | Cash at bank | 15,000 |
| Rahul | 15,000 | 70,000 | | |
| | | **1,35,000** | | **1,35,000** |

Sohan died on June 15, 2017. According to the Deed, his legal representatives are entitled to:

(a) Balance in Capital Account;
(b) Share of goodwill valued on the basis of thrice the average of the past 4 years' profits.

(c) Share in profits up to the date of death on the basis of average profits for the past 4 years.
(d) Interest on capital account @ 12% p.a.

Profits for the years ending on March 31 of 2014, 2015, 2016, 2017 respectively were Rs. 15,000, Rs. 17,000, Rs. 19,000 and Rs. 13,000.

The firm had taken a Joint Life Policy of Rs. 1,25,000, the annual premium being charged to profit & loss account every year.

Sohan's legal representatives were to be paid the amount due. Mohit and Rahul continued as partner by taking over Sohan's share equally. Work out the amount payable to Sohan's legal representatives.

### Solution

**Books of Mohit, Sohan and Rahul**
**Sohan's Capital Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Goodwill | | 12,000 | Apr. 1 | Balance b/d | | 25,000 |
| | Sohan's Executor | | 94,158 | Jun.15 | Reserve Fund | | 10,000 |
| | | | | | Mohit's Capital | | 9,600 |
| | | | | | Rahul's Capital | | 9,600 |
| | | | | | Profit & Loss suspense | | 1,333 |
| | | | | | Joint life policy | | 50,000 |
| | | | | | Interest on Capital | | 625 |
| | | | **1,06,158** | | | | **1,06,158** |

*Working Notes*

1. Sohan's Share of Goodwill

$$= \text{Goodwill of the Firm} \times \frac{2}{5}$$

$$= \text{Rs. } 48{,}000 \times \frac{2}{5} = \text{Rs. } 19{,}200$$

Goodwill of the Firm $= 3 \times$ Average Profit

$$= 3 \times \frac{\text{Rs. } 64{,}000}{4} = \text{Rs. } 48{,}000$$

2. Profit and Loss
(Share of Profit from the date of last Balance Sheet to the date of death) $2\frac{1}{2}$ months.

$= \frac{\text{Rs. } 64{,}000}{4} \times \frac{2}{5} \times \frac{2.5}{12}$

= Rs. 1,333

3. Joint Life Policy = Rs. 1,25,000

Sohan's Share $= \frac{2}{5} \times$ Rs. 1,25,000

= Rs. 50,000

4. Interest on Capital $= \text{Rs. } 25{,}000 \times \frac{12}{100} \times \frac{2.5}{12}$

= Rs. 625

**Do it Yourself**

On December 31, 2015, the Balance Sheet of Pinki, Qureshi and Rakesh showed as under :

**Balance Sheet as on December 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 25,000 | Buildings | 26,000 |
| Reserve Fund | | 20,000 | Investments | 15,000 |
| Capitals: | | | Debtors | 15,000 |
| Pinki | 15,000 | | Bills Receivables | 6,000 |
| Qureshi | 10,000 | | Stock | 12,000 |
| Rakesh | 10,000 | 35,000 | Cash | 6,000 |
| | | **80,000** | | **80,000** |

The partnership deed provides that the profit be shared in the ratio of 2:1:1 and that in the event of death of a partner, his executors be entitled to be paid out :

(a) The capital of his credit at the date of last Balance Sheet.
(b) His proportion of reserves at the date of last Balance Sheet.
(c) His proportion of profits to the date of death based on the average profits of the last three completed years, plus 10%, and
(d) By way of goodwill, his proportion of the total profits for the three preceding years. The net profit for the last three years were :

| | *(Rs.)* |
|---|---|
| 2013 | 16,000 |
| 2014 | 16,000 |
| 2015 | 15,400 |

Rakesh died on April 1, 2015. He had withdrawn Rs.5,000 to the date of his death. The investment were sold at par and R's Executors were paid off. Prepare Rakesh's Capital Account that of his executors.

### *Terms Introduced in the Chapter*

- Retirement of a Partner.
- Death of a Partner.
- Gaining Ratio
- Executors of deceased Partner
- Executor's Account.

### *Summary*

1. *New Profit Sharing Ratio:* New profit sharing ratio is the ratio in which the remaining partner will share future profits after the retirement or death of any partner.

   New Share = Old Share + Acquired Share from the Outgoing partner
2. *Gaining Ratio:* Gaining ratio is the ratio in which the continuing partners have acquired the share from the retiring deceased partner.
3. *Treatment of Goodwill:* The basic rule is that gaining partner(s) shared compensate the sacrificing partner to the extent of their gain for the respective share of goodwill.

   If goodwill already appears in the books, it will be written off by debiting all partner's capital account in their old profit sharing ratio.
4. *Revaluation of Assets and Liabilities*: At the time of retirement/death of a partner, there may be some assets which may not have been shown at their current values. Similarly, there may be certain liabilities which have been shown at a value different from the obligation to be met by the firm.

   Besides this, there may be unrecorded assets and liabilities which have to be recorded.
5. *Accumulated Profits or Losses:* The reserves (Accumulated profits) or losses belong to all the partners and should be transferred to capital account of all partners.
6. Retiring partner/deceased partner may be paid in one lump sum or installments with interest.
7. At the time of retirement/death of a partner, the remaining partner may decide to keep their capital contributions in their profit sharing ratio.

### *Questions for Practice*

**Short Answer Questions**

1. What are the different ways in which a partner can retire from the firm.
2. Write the various matters that need adjustments at the time of retirement of a partners.
3. Distinguish between sacrificing ratio and gaining tab.

4. Why do firm revaluate assets and reassers their liabilities on retirement or on the event of death of a partner.
5. Why a retiring/deceased partner is entitled to a share of goodwill of the firm.

**Long Answer Questions**

1. Explain the modes of payment to a retiring partner.
2. How will you compute the amount payable to a deceased partner?
3. Explain the treatment of goodwill at the time of retirement or on the event of death of a partner?
4. Discuss the various methods of computing the share in profits in the event of death of a partner.

## *Numerical Questions*

1. Aparna, Manisha and Sonia are partners sharing profits in the ratio of 3 : 2 : 1. Manisha retires and goodwill of the firm is valued at Rs. 1,80,000. Aparna and Sonia decided to share future in the ratio of 3 : 2. Pass necessary journal entries.

   (**Ans :** Dr. Aparna's Capital A/c by Rs. 18,000, Dr. Sonia's Capital A/c by Rs. 42,000, Cr. Manisha's Capital A/c by Rs. 60,000).
2. Sangeeta, Saroj and Shanti are partners sharing profits in the ratio of 2 : 3 : 5. Goodwill is appearing in the books at a value of Rs. 60,000. Sangeeta retires and goodwill is valued at Rs. 90,000. Saroj and Shanti decided to share future profits equally. Record necessary journal entries.
3. Himanshu, Gagan and Naman are partners sharing profits and losses in the ratio of 3 : 2 : 1. On March 31, 2017, Naman retires.

   The various assets and liabilities of the firm on the date were as follows:

   Cash Rs. 10,000, Building Rs. 1,00,000, Plant and Machinery Rs. 40,000, Stock Rs. 20,000, Debtors Rs. 20,000 and Investments Rs. 30,000.

   The following was agreed upon between the partners on Naman's retirement:
   (i) Building to be appreciated by 20%.
   (ii) Plant and Machinery to be depreciated by 10%.
   (iii) A provision of 5% on debtors to be created for bad and doubtful debts.
   (iv) Stock was to be valued at Rs. 18,000 and Investment at Rs. 35,000.

   Record the necessary journal entries to the above effect and prepare the revaluation account.
4. Naresh, Raj Kumar and Bishwajeet are equal partners. Raj Kumar decides to retire. On the date of his retirement, the Balance Sheet of the firm showed the following: General Reserves Rs. 36,000 and Profit and Loss Account (Dr.) Rs. 15,000.
   Pass the necessary journal entries to the above effect.

5. Digvijay, Brijesh and Parakaram were partners in a firm sharing profits in the ratio of 2 : 2 : 1. Their Balance Sheet as on March 31, 2017 was as follows:

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Creditors | 49,000 | Cash | 8,000 |
| Reserves | 18,500 | Debtors | 19,000 |
| Digvijay's Capital | 82,000 | Stock | 42,000 |
| Brijesh's Capital | 60,000 | Buildings | 2,07,000 |
| Parakaram's Capital | 75,500 | Patents | 9,000 |
| | **2,85,000** | | **2,85,000** |

Brijesh retired on March 31, 2017 on the following terms:

(i) Goodwill of the firm was valued at Rs. 70,000 and was not to appear in the books.

(ii) Bad debts amounting to Rs. 2,000 were to be written off.

(iii) Patents were considered as valueless.

Prepare Revaluation Account, Partners' Capital Accounts and the Balance Sheet of Digvijay and Parakaram after Brijesh's retirement.

(**Ans :** Loss on Revaluation Rs. 11,000, Balance of Capital Accounts: Digvijay Rs. 66,333 and Parakaram Rs. 67,667, Balance Sheet Total Rs. 2,74,000).

6. Radha, Sheela and Meena were in partnership sharing profits and losses in the proportion of 3:2:1. On April 1, 2017, Sheela retires from the firm. On that date, their Balance Sheet was as follows:

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Trade Creditors | | 3,000 | Cash-in-Hand | 1,500 |
| Bills Payable | | 4,500 | Cash at Bank | 7,500 |
| Expenses Owing | | 4,500 | Debtors | 15,000 |
| General Reserve | | 13,500 | Stock | 12,000 |
| Capitals: | | | Factory Premises | 22,500 |
| Radha | 15,000 | | Machinery | 8,000 |
| Sheela | 15,000 | | Losse Tools | 4,000 |
| Meena | 15,000 | 45,000 | | |
| | | **70,500** | | **70,500** |

The terms were:

a) Goodwill of the firm was valued at Rs. 13,500.

b) Expenses owing to be brought down to Rs. 3,750.

c) Machinery and Loose Tools are to be valued at 10% less than their book value.

d) Factory premises are to be revalued at Rs. 24,300.

*Prepare:*
1. Revaluation account
2. Partner's capital accounts and
3. Balance sheet of the firm after retirement of Sheela.

(**Ans :** Profit on Revaluation Rs. 1,350, Balance of Capital Accounts: Radha Rs. 19,050 and Meena Rs. 16,350, Balance Sheet Total = Rs. 71,100).

7. Pankaj, Naresh and Saurabh are partners sharing profits in the ratio of 3 : 2 : 1. Naresh retired from the firm due to his illness. On that date the Balance Sheet of the firm was as follows:

**Books of Pankaj, Naresh and Saurabh**
**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| General Reserve | | 12,000 | Bank | | 7,600 |
| Sundry Creditors | | 15,000 | Debtors | 6,000 | |
| Bills Payable | | 12,000 | *Less:* Provision for Doubtful Debt | 400 | 5,600 |
| Outstanding Salary | | 2,200 | | | |
| Provision for Legal Damages | | 6,000 | Stock | | 9,000 |
| Capitals: | | | Furniture | | 41,000 |
| Pankaj | 46,000 | | Premises | | 80,000 |
| Naresh | 30,000 | | | | |
| Saurabh | 20,000 | 96,000 | | | |
| | | **1,43,200** | | | **1,43,200** |

*Additional Information*

(i) Premises have appreciated by 20%, stock depreciated by 10% and provision for doubtful debts was to be made 5% on debtors. Further, provision for legal damages is to be made for Rs. 1,200 and furniture to be brought up to Rs. 45,000.

(ii) Goodwill of the firm be valued at Rs. 42,000.

(iii) Rs. 26,000 from Naresh's Capital account be transferred to his loan account and balance be paid through bank; if required, necessary loan may be obtained form Bank.

(iv) New profit sharing ratio of Pankaj and Saurabh is decided to be 5 : 1.

Give the necessary ledger accounts and balance sheet of the firm after Naresh's retirement.

(**Ans :** Profit or Revaluation Rs. 18,000, Balance of Capital Account of Pankaj, Rs. 47,000 and of Saurabh, Rs. 25,000).

(Total Amount at Credit in Naresh's Capital = Rs. 54,000, Balance Sheet Total = Rs. 1,54,800).

8. Puneet, Pankaj and Pammy are partners in a business sharing profits and losses in the ratio of 2 : 2 : 1 respectively. Their balance sheet as on March 31, 2017 was as follows:

**Books of Puneet, Pankaj and Pammy**
**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 1,00,000 | Cash at Bank | 20,000 |
| Capital Accounts: | | | Stock | 30,000 |
| Puneet | 60,000 | | Sundry Debtors | 80,000 |
| Pankaj | 1,00,000 | | Investments | 70,000 |
| Pammy | 40,000 | 2,00,000 | Furniture | 35,000 |
| Reserve | | 50,000 | Buildings | 1,15,000 |
| | | **3,50,000** | | **3,50,000** |

Mr. Pammy died on September 30, 2017. The partnership deed provided the following:

(i) The deceased partner will be entitled to his share of profit up to the date of death calculated on the basis of previous year's profit.

(ii) He will be entitled to his share of goodwill of the firm calculated on the basis of 3 years' purchase of average of last 4 years' profit. The profits for the last four financial years are given below:
for 2013–14; Rs. 80,000; for 2014–15, Rs. 50,000; for 2015–16, Rs. 40,000; for 2016–17, Rs. 30,000.
The drawings of the deceased partner up to the date of death amounted to Rs. 10,000. Interest on capital is to be allowed at 12% per annum.
Surviving partners agreed that Rs. 15,400 should be paid to the executors immediately and the balance in four equal yearly instalments with interest at 12% p.a. on outstanding balance.
Show Mr. Pammy's Capital account, his Executor's account till the settlement of the amount due.

(**Ans :** Total amount due is Rs. 75,400)

9. Following is the Balance Sheet of Prateek, Rockey and Kushal as on March 31, 2017.

**Books of Prateek, Rockey and Kushal**
**Balance Sheet as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 16,000 | Bills Receivable | 16,000 |
| General Reserve | | 16,000 | Furniture | 22,600 |
| Capital Accounts: | | | Stock | 20,400 |
| Prateek | 30,000 | | Sundry Debtors | 22,000 |
| Rockey | 20,000 | | Cash at Bank | 18,000 |
| Kushal | 20,000 | 70,000 | Cash in Hand | 3,000 |
| | | **1,02,000** | | **1,02,000** |

Rockey died on June 30, 2017. Under the terms of the partnership deed, the executors of a deceased partner were entitled to:

a) Amount standing to the credit of the Partner's Capital account.
b) Interest on capital at 5% per annum.
c) Share of goodwill on the basis of twice the average of the past three years' profit and
d) Share of profit from the closing date of the last financial year to the date of death on the basis of last year's profit.

Profits for the year ending on March 31, 2015, March 31, 2016 and March 31, 2017 were Rs. 12,000, Rs. 16,000 and Rs. 14,000 respectively. Profits were shared in the ratio of capitals.

Pass the necessary journal entries and draw up Rockey's capital account to be rendered to his executor.

(**Ans :** Sony's Executor Account is Rs. 33,821)

10. Narang, Suri and Bajaj are partners in a firm sharing profits and losses in proportion of 1/2 , 1/6 and 1/3 respectively. The Balance Sheet on April 1, 2015 was as follows:

**Books of Suri and Bajaj**
**Balance Sheet as on April 1, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Bills Payable | | 12,000 | Freehold Premises | | 40,000 |
| Sundry Creditors | | 18,000 | Machinery | | 30,000 |
| Reserves | | 12,000 | Furniture | | 12,000 |
| Capital Accounts: | | | Stock | | 22,000 |
| Narang | 30,000 | | Sundry Debtors | 20,000 | |
| Suri | 30,000 | | *Less:* Reserve for Bad Debt | 1,000 | 19,000 |
| Bajaj | 28,000 | 88,000 | | | |
| | | | Cash | | 7,000 |
| | | **1,30,000** | | | **1,30,000** |

Bajaj retires from the business and the partners agree to the following:

a) Freehold premises and stock are to be appreciated by 20% and 15% respectively.
b) Machinery and furniture are to be depreciated by 10% and 7% respectively.
c) Bad Debts reserve is to be increased to Rs. 1,500.
d) Goodwill is valued at Rs. 21,000 on Bajaj's retirement.
e) The continuing partners have decided to adjust their capitals in their new profit sharing ratio after retirement of Bajaj. Surplus/deficit, if any, in their capital accounts will be adjusted through current accounts.

Prepare necessary ledger accounts and draw the Balance Sheet of the reconstituted firm.

(**Ans :** Profit on Revaluation, Rs. 6,960; Balance in Capital Accounts of Narang, Rs. 49,230; and that of Suri, Rs. 16,410. Amount at Credit in Bajaj Capital is Rs. 41,320).

11. The Balance Sheet of Rajesh, Pramod and Nishant who were sharing profits in proportion to their capitals stood as on March 31, 2015:

**Books of Rajesh, Pramod and Nishant**
**Balance Sheet as on March 31, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Bills Payable | | 6,250 | Factory Building | | 12,000 |
| Sundry Creditors | | 10,000 | Debtors | 10,500 | |
| Reserve Fund | | 2,750 | *Less:* Reserve | 500 | 10,000 |
| Capital Accounts: | | | Bills Receivable | | 7,000 |
| Rajesh | 20,000 | | Stock | | 15,500 |
| Pramod | 15,000 | | Plant and Machinery | | 11,500 |
| Nishant | 15,000 | 50,000 | Bank Balance | | 13,000 |
| | | **69,000** | | | **69,000** |

Pramod retired on the date of Balance Sheet and the following adjustments were made:

a) Stock was valued at 10% less than the book value.
b) Factory buildings were appreciated by 12%.
c) Reserve for doubtful debts be created up to 5%.
d) Reserve for legal charges to be made at Rs. 265.
e) The goodwill of the firm be fixed at Rs. 10,000.
f) The capital of the new firm be fixed at Rs. 30,000. The continuing partners decide to keep their capitals in the new profit sharing ratio of 3 : 2.

Pass journal entries and prepare the balance sheet of the reconstituted firm after transferring the balance in Pramod's Capital account to his loan account.

(**Ans :** Loss on Revaluation, Rs. 400 ; Balance in Capital Accounts of Rajesh, Rs. 18,940; and of Nishant, Rs. 14,705; Pramod's Loan Rs. 18,705, Balance Sheet Total = Rs. 65,220).

12. Following is the Balance Sheet of Jain, Gupta and Malik as on March 31, 2016.

**Books of Jain, Gupta and Malik**
**Balance Sheet as on March 31, 2016**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 19,800 | Land and Building | 26,000 |
| Telephone bills Outstanding | | 300 | Bonds | 14,370 |
| Accounts Payable | | 8,950 | Cash | 5,500 |
| Accumulated profits | | 16,750 | Bills Receivable | 23,450 |
| Capitals : | | | Sundry Debtors | 26,700 |
| | | | Stock | 18,100 |
| Jain | 40,000 | | Office Furniture | 18,250 |
| Gupta | 60,000 | | Plants and Machinery | 20,230 |
| Malik | 20,000 | 1,20,000 | Computers | 13,200 |
| | | **1,65,800** | | **1,65,800** |

The partners have been sharing profits in the ratio of 5:3:2. Malik decides to retire from business on April 1, 2016 and his share in the business is to be calculated as per the following terms of revaluation of assets and liabilities : Stock, Rs.20,000; Office furniture, Rs.14,250; Plant and Machinery Rs.23,530; Land and Building Rs.20,000.

A provision of Rs.1,700 to be created for doubtful debts. The goodwill of the firm is valued at Rs.9,000.

The continuing partners agreed to pay Rs.16,500 as cash on retirement of Malik, to be contributed by continuing partners in the ratio of 3:2. The balance in the capital account of Malik will be treated as loan.

Prepare Revaluation account, capital accounts, and Balance Sheet of the reconstituted firm.

13. Arti, Bharti and Seema are partners sharing profits in the proportion of 3:2:1 and their Balance Sheet as on March 31, 2016 stood as follows :

**Books of Arti, Bharti and Seema**
**Balance Sheet as on March 31, 2016**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Bills Payable | | 12,000 | Buildings | 21,000 |
| Creditors | | 14,000 | Cash in Hand | 12,000 |
| General Reserve | | 12,000 | Bank | 13,700 |
| Capitals: | | | Debtors | 12,000 |
| Arti | 20,000 | | Bills Receivable | 4,300 |
| Bharti | 12,000 | | Stock | 1,750 |
| Seema | 8,000 | 40,000 | Investment | 13,250 |
| | | **78,000** | | **78,000** |

Bharti died on June 12, 2016 and according to the deed of the said partnership, her executors are entitled to be paid as under :

(a) The capital to her credit at the time of her death and interest thereon @ 10% per annum.

(b) Her proportionate share of reserve fund.

(c) Her share of profits for the intervening period will be based on the sales during that period, which were calculated as Rs.1,00,000. The rate of profit during past three years had been 10% on sales.

(d) Goodwill according to her share of profit to be calculated by taking twice the amount of the average profit of the last three years less 20%. The profits of the previous years were :

2013 – Rs.8,200
2014 – Rs.9,000
2015 – Rs.9,800

The investments were sold for Rs.16,200 and her executors were paid out. Pass the necessary journal entries and write the account of the executors of Bharti.



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14. Nithya, Sathya and Mithya were partners sharing profits and losses in the ratio of 5:3:2. Their Balance Sheet as on March 31, 2015 was as follows :

**Books of Nithya, Sathya and Mithya**
**Balance Sheet at March 31, 2015**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 14,000 | Investments | 10,000 |
| Reserve Fund | | 6,000 | Goodwill | 5,000 |
| Capitals: | | | Premises | 20,000 |
| Nithya | 30,000 | | Patents | 6,000 |
| Sathya | 30,000 | | Machinery | 30,000 |
| Mithya | 20,000 | 80,000 | Stock | 13,000 |
| | | | Debtors | 8,000 |
| | | | Bank | 8,000 |
| | | **1,00,000** | | **1,00,000** |

Mithya dies on August 1, 2015. The agreement between the executors of Mithya and the partners stated that :

(a) Goodwill of the firm be valued at $2\frac{1}{2}$ times the average profits of last four years. The profits of four years were : in 2011-12, Rs.13,000; in 2012-13, Rs.12,000; in 2013-14, Rs.16,000; and in 2014-15, Rs.15,000.

(b) The patents are to be valued at Rs.8,000, Machinery at Rs.25,000 and Premises at Rs.25,000.

(c) The share of profit of Mithya should be calculated on the basis of the profit of 2014-15.

(d) Rs.4,200 should be paid immediately and the balance should be paid in 4 equal half-yearly instalments carrying interest @ 10%.

Record the necessary journal entries to give effect to the above and write the executor's account till the amount is fully paid. Also prepare the Balance Sheet of Nithya and Sathya as it would appear on August 1, 2015 after giving effect to the adjustments.

### *Check-list to Test your Understanding*

*Test your understanding – I*

1. (b), 2. (c), 3. (b), 4. (a).

*Test your understanding – II*

1. (a), 2. (a), 3. (c), 4. (b).

# Dissolution of Partnership Firm

# 5

You have learnt about the reconstitution of a partnership firm which takes place on account of admission, retirement or death of a partner. In such a situation while the existing partnership is dissolved, the firm may continue under the same name if the partners so decide. In other words, it results in the dissolution of a partnership but not that of the firm. According to Section 39 of the partnership Act 1932, the dissolution of partnership between all the partners of a firm is called the dissolution of the firm. That means the Act recognises the difference in the breaking of relationship between all the partners of a firm and between some of the partners; and it is the breaking or discontinuance of relationship between all the partners which is termed as the dissolution of partnership firm. This brings an end to the existence of firm, and no business is transacted after dissolution except the activities related to closing of the firm as the affairs of the firm are to be wound up by selling firm's assets and paying its liabilities and discharging the claims of the partners.

**Learning Objectives**

*After studying this chapter you will be able to :*

- *State the meaning of dissolution of partnership firm;*
- *Differentiate between dissolution of partnership and dissolution of a partnership firm;*
- *Describe the various modes of dissolution of the partnership firm;*
- *Explain the rules relating to the settlement of claims among all partners;*
- *Prepare Realisation Account;*

## 5.1 Dissolution of Partnership

As stated earlier dissolution of partnership changes the existing relationship between partners but the firm may continue its business as before. The dissolution of partnership may take place in any of the following ways:

(1) Change in existing profit sharing ratio among partners;
(2) Admission of a new partner;

(3) Retirement of a partner;
(4) Death of a partner;
(5) Insolvency of a partner;
(6) Completion of the venture, if partnership is formed for that; and
(7) Expiry of the period of partnership, if partnership is for a specific period of time;

### 5.2 Dissolution of a firm

Dissolution of a partnership firm may take place without the intervention of court or by the order of a court, in any of the ways specified later in this section. It may be noted that dissolution of the firm necessarily brings in dissolution of the partnership.

Dissolution of a firm takes place in any of the following ways:

1. *Dissolution by Agreement:* A firm is dissolved :
   (a) with the consent of all the partners or
   (b) in accordance with a contract between the partners.
2. *Compulsory Dissolution:* A firm is dissolved compulsorily in the following cases:
   (a) when all the partners or all but one partner, become insolvent, rendering them incompetent to sign a contract;
   (b) when the business of the firm becomes illegal; or
   (c) when some event has taken place which makes it unlawful for the partners to carry on the business of the firm in partnership, e.g., when a partner who is a citizen of a country becomes an alien enemy because of the declaration of war with his country and India.
3. *On the happening of certain contingencies:* Subject to contract between the partners, a firm is dissolved :
   (a) if constituted for a fixed term, by the expiry of that term;
   (b) if constituted to carry out one or more ventures, by the completion thereof;
   (c) by the death of a partner;
   (d) by the adjudication of a partner as an insolvent.
4. *Dissolution by Notice:* In case of partnership at will, the firm may be dissolved if any one of the partners gives a notice in writing to the other partners, signifying his intention of seeking dissolution of the firm.
5. *Dissolution by Court:* At the suit of a partner, the court may order a partnership firm to be dissolved on any of the following grounds:
   (a) when a partner becomes insane;
   (b) when a partner becomes permanently incapable of performing his duties as a partner;
   (c) when a partner is guilty of misconduct which is likely to adversely affect the business of the firm;

(d) when a partner persistently commits breach of partnership agreement;
(e) when a partner has transferred the whole of his interest in the firm to a third party;
(f) when the business of the firm cannot be carried on except at a loss; or
(g) when, on any ground, the court regards dissolution to be just and equitable.

**Distinction between Dissolution of Partnership and Dissolution of Firm**

| *Basis* | *Dissolution of Partnership* | *Dissolution of Firm* |
|---|---|---|
| 1. Termination of business | The business is not terminated. | The business of the firm is closed. |
| 2. Settlement of assets and liabilities | Assets and liabilities are revalued and new balance sheet is drawn. | Assets are sold and liabilities are paid-off. |
| 3. Court's intervention | Court does not intervene because partnership is dissolved by mutual agreement. | A firm can be dissolved by the court's order. |
| 4. Economic relationship | Economic relationship between the partners continues though in a changed form. | Economic relationship between the partners comes to an end. |
| 5. Closure of books | Does not require because the business is not terminated. | The books of account are closed. |
| 6. Other dissolution | It may or may not involve dissolution of the firm. | It necessarily involves dissolution of partnership. |

**Test your Understanding – I**

State giving reasons, which of the following statements are true or false:
1. Dissolution of a partnership is different from dissolution of a firm,
2. A partnership is dissolved when there is a death of a partner,
3. A firm is dissolved when all partners give consent to it.
4. A firm is compulsorily dissolved when a partner decide to retire.
5. Dissolution of a firm necessarily involves dissolution of partnership.
6. A firm is compulsorily dissolved when all partners or when all except one partner become involvent.
7. Court can order a firm to be dissolved when a partner becomes insane.
8. Dissolution of partnership can not take place without intervention of the court.

## 5.3 Settlement of Accounts

In case of dissolution of a firm, the firm ceases to conduct business and has to settle its accounts. For this purpose, it disposes off all its assets for satisfying all the claims against it. In this context it should be noted that, subject to agreement among the partners, the following rules as provided in Section 48 of the Partnership Act 1932 shall apply.

(a) *Treatment of Losses*

Losses, including deficiencies of capital, shall be paid :

(i) first out of profits,
(ii) next out of capital of partners, and
(iii) lastly, if necessary, by the partners individually in their profits sharing ratio.

(b) *Application of Assets*

The assets of the firm, including any sum contributed by the partners to make up deficiencies of capital, shall be applied in the following manner and order:

(i) In paying the debts of the firm to the third parties;
(ii) In paying each partner proportionately what is due to him/her from the firm for advances as distinguished from capital (i.e. partner' loan);
(iii) In paying to each partner proportionately what is due to him on account of capital; and
(iv) the residue, if any, shall be divided among the partners in their profit sharing ratio.

Thus, the amount realised from assets along with contribution from partners, if required, shall be utilised first to pay off the outside liabilities of the firm such as creditors, loans, bank overdraft, bill payables, etc. (it may be noted that secured loans have precedence over the unsecured loans); the balance should be applied to repay loans and advances made by the partners to the firm. (in case the balance amount is not adequate enough to pay off such loans and advances, they are to be paid propartionately); and surplus, if any is to be utilised in settlement of the capital account balances, after adjusting all profits and losses.

*Private Debts and Firm's Debts:* Where both the debts of the firm and private debts of a partner co-exist, the following rules, as stated in Section 49 of the Act, shall apply.

(a) The property of the firm shall be applied first in the payment of debts of the firm and then the surplus, if any, shall be divided among the partners as per their claims, which can be utilised for payment of their private liabilities.
(b) The private property of any partner shall be applied first in payment of his private debts and the surplus, if any, may be utilised for payment of the firm's debts, in case the firm's liabilities exceed the firm's assets.

It may be noted that the private property of the partner does not include the personal properties of his wife and children. Thus, if the assets of the firm are not adequate enough to pay off firm's liabilities, the partners have to contribute out of their net private assets (private assets minus private liabilities).

**Inability of a Partner to Contribute Towards Deficiency**

In the context of settlement of accounts among the partners there is still another important aspect to be noted, i.e., when a partner is unable to contribute towards the deficiency of his capital account (the account finally showing a debit balance), he/she is said to be insolvent, and the sum not recoverable is treated as capital loss for the firm. In the absence of any agreement, to the contrary, such a capital loss is to be borne by the remaining solvent partners in accordance with the principle laid down in Garner vs. Murray case, which states that the solvent partners have to bear such loss in the ratio of their capitals as on the date of dissolution. However, the accounting treatment relating to dissolution of partnership on account of insolvency of partners is not being taken up at this stage.

## 5.4 Accounting Treatment

When the firm is dissolved, its books of account are to be closed and the profit or loss arising on realisation of its assets and discharge of liabilities is to be computed. For this purpose, a Realisation Account is prepared to ascertain the net effect (profit or loss) of realisation of assets and payment of liabilities which may be is transferred to partner's capital accounts in their profit sharing ratio. Hence, all assets (other than cash in hand bank balance and fictitious assets, if any), and all external liabilities are transferred to this account. It also records the sale of assets, and payment of liabilities and realisation expenses. The balance in this account is termed as profit or loss on realisation which is transferred to partners' capital accounts in thier profit sharing ratio (see figure 5.1)

*Dr.* **Realisation Account** *Cr.*

| *Particulars* | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|
| Land and Building | xxx | Sundry creditors | xxx |
| Plant and Machinery | xxx | Bills payables | xxx |
| Furniture and Fittings | xxx | Bank overdraft | xxx |
| Bills receivables | xxx | Outstanding expenses | xxx |
| Sundry debtors | xxx | Provision for doubtful debts | xxx |
| Cash/Bank (payment of liabilities) | xxx | Cash/Bank (sale of assets) | xxx |
| Cash/Bank (payment of unrecorded liabilities) | xxx | Partner's capital account (assets taken by the partner) | xxx |
| Partner's capital account (liability assumed by the partner) | xxx | Loss (transferred to partners capital accounts) | xxx |
| Profit (transferred to partners' capital account's in their profit sharing ratio) | xxx | | |
| **Total** | **xxxxx** | **Total** | **xxxxx** |

**Fig. 5.1:** *Format of Realisation Account*

### *Illustration 1*

Supriya and Monika are partners, who share profit in the ratio of 3:2. Following is the balance sheet as on March 31, 2017.

**Balance Sheet of Supriya and Monika as on March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Supriya's Capital | 32,500 | Cash and Bank | | 40,500 |
| Monika's Capital | 11,500 | Stock | | 7,500 |
| Sundry Creditors | 48,000 | Sundry debtors | 21,500 | |
| Reserve fund | 13,500 | *Less:* Provision for doubtful debts | 500 | 21,000 |
| | | Fixed Assets | | 36,500 |
| | **1,05,500** | | | **1,05,500** |

The firm was dissolved on March 31, 2017. Close the books of the firm with the following information:

(i) Debtors realised at a discount of 5%,
(ii) Stock realised at Rs.7,000,
(iii) Fixed assets realised at Rs.42,000,
(iv) Realisation expenses of Rs.1,500,
(v) Creditors are paid in full.

Prepare necessary ledger accounts.

### *Solution*

**Books of Supriya and Monika**
**Realisation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Assets transferred: | | | Provision for doubtful debts | | 500 |
| Stock | | 7,500 | Sundry creditors | | 48,000 |
| Sundry debtors | | 21,500 | Bank | | |
| Fixed assets | | 36,500 | Debtors | 20,425 | |
| Bank | | | Stock | 7,000 | |
| Creditors | | 48,000 | Fixed assets | 42,000 | 69,425 |
| Realisation expenses | | 1,500 | | | |
| Profit transferred to: | | | | | |
| Supriya Capital | 1,755 | | | | |
| Monika Capital | 1,170 | 2,925 | | | |
| | | **1,17,925** | | | **1,17,925** |

**Partners Capital Accounts**

Dr. Cr.

| Date | Particulars | J.F. | Supriya (Rs.) | Monika (Rs.) | Date | Particulars | J.F. | Supriya (Rs.) | Monika (Rs.) |
|---|---|---|---|---|---|---|---|---|---|
| | Bank | | 42,355 | 18,070 | | Balance b/d | | 32,500 | 11,500 |
| | | | | | | Reserve fund | | 8,100 | 5,400 |
| | | | | | | Realisation (Profit) | | 1,755 | 1,170 |
| | | | **42,355** | **18,070** | | | | **42,355** | **18,070** |

**Cash and Bank Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 40,500 | | Realisation | | 48,000 |
| | Realisation | | 69,425 | | Realisation | | 1,500 |
| | | | | | Supriya's Capital | | 42,355 |
| | | | | | Monika's Capital | | 18,070 |
| | | | **1,09,925** | | | | **1,09,925** |

### *5.4.1 Journal Entries*

1. *For trnasfer of assets*

   All asset accounts excluding cash, bank and the fictitious assets, if any are closed by transfer to the debit of Realisation Account at their book values. It may be noted that sundry debtors are transferred at gross value and the provision for doubtful debts is transferred to the credit side of Realisation Account along with liabilities. The same thing will apply to fixed assets, if provision for depreciation account is maintained.

   Realisation A/c Dr.
   To Assets (Individually) A/c

2. *For transfer of liabilities*

   All external liability accounts including provisions, if any, are closed by transferring them to the credit of Realisation account.

   Liabilities (individually) Dr.
   To Realisation A/c

3. *For sale of assets*

   Bank A/c Dr.
   To Realisation A/c

4. *For an asset taken over by a partner*

   Partner's Capital A/c Dr.
   To Realisation A/c

5. *For payment of liabilities*

   Realisation A/c Dr.
   To Bank A/c

6. *For a liability which a partner takes responsibility to discharge*

   Ralisation A/c Dr.
   To Partner's Capital A/c

7. For settlement with the creditor through transfer of assets when a creditor accepts an asset in full and final settlement of his account, journal entry needs to be recorded. But, if the creditor accepts an asset only as part payment of his/her dues, the entry will be made for cash payment only. For example, a creditor to whom Rs. 10,000 was due accepts office equipment worth Rs. 8,000 and is paid Rs. 2,000 in cash, the following entry shall be made for the payment of Rs. 2,000 only.

   Realisation A/c Dr.
   To Bank A/c

However, when a creditor accepts an asset whose value is more than the amount due to him, he/she will pay cash to the frim for the difference for which the entry will be:

   Bank A/c Dr.
   To Realisation A/c

8. *For payment of realisation expenses*

   (a) When some expenses are incurred and paid by the firm in the process of realisation of assets and payment of liabilities:

   Realisation A/c Dr.
   To Bank A/c

   (b) When realisation expenses are paid by a partner on behalf of the firm:

   Realisation A/c Dr.
   To Partner's Capital A/c

   (c) When a partner has agreed to undertake the dissolution work for an agreed remuneration bear the realisation expenses:

   (i) if payment of realisation expenses is made by the firm

   Partner's Capital A/c Dr.
   To Bank A/c

   (ii) if the partner himself pays the realisation expenses, no entry is required

   (iii) For agreed remuneration to such partner

   Realisation A/c Dr.
   To Partner's Capital A/c

9. *For realisation of any unrecorded assets including goodwill, if any*

    Bank A/c Dr.
    To Realisation A/c

10. *For settlement of any unrecorded liability*

    Realisation A/c Dr.
    To Bank A/c

11. *For transfer of profit and loss on realisation*

    (a) In case of profit on realisation
    Realisation A/c Dr.
    To Partners' Capital A/c (individually) A/c

    (b) In case of loss on realisation
    Partners' Capital A/c (individually) Dr.
    To Realisation A/c

12. *For transfer of accumulated profits in the form of reserve fund or general reserve:*

    Reserve Fund/General Reserve A/c Dr.
    To Partners' Capital A/c (individually)

13. *For transfer of fictitious assets, if any, to partners' capital accounts in their profit sharing ratio:*

    Partners' Capital A/c (individually) Dr.
    To Fictitious Asset A/c

14. *For payment of loans due to partners*

    Partner's Loan A/c Dr.
    To Bank A/c

15. *For settlement of partners' accounts*

    If the partner's capital account shows a debit balance, he brings in the necessary cash for which the entry will be:

    Bank A/c Dr.
    To Partner's Capital A/c

    The balance is paid to partners whose capital accounts show a credit balance and the following entry is recorded.

    Partners' Capitals A/cs (individually) Dr.
    To Bank A/c

It may be noted that the aggregate amount finally payable to the partners must equal to the amount available in bank and cash accounts. Thus, all accounts of a firm are closed in case of dissolution.

**Test your Understanding – II**

**Tick (✓) the Correct Answer**

1. On dissolution of a firm, bank overdraft is transferred to :
   (a) Cash Account
   (b) Bank Account
   (c) Realisation Aaccount
   (d) Partner's capital Account.
2. On dissolution of a firm, partner's loan account is transferred to:
   (a) Realisation Account
   (b) Partner's Capital Account
   (c) Partner's Current Account
   (d) None of the above.
3. After transferring liabilities like creditors and bills payables in the Realisation Account, in the absence of any information regarding then payment, such liabilities are treated as:
   (a) Never paid
   (b) Fully paid
   (c) Partly paid
   (d) None of the above.
4. When realisation expenses are paid by the firm on behalf of a partner, such expenses are debited to:
   (a) Realisation Account
   (b) Partner's Capital Account
   (c) Partner's Loan Account
   (d) None of the above.
5. Unrecorded assets when taken over by a partner are shown in :
   (a) Debit of Realisation Account
   (b) Debit of Bank Account
   (c) Credit of Realisation Account
   (d) Credit of Bank Account.
6. Unrecorded liabilities when paid are shown in:
   (a) Debit of Realisation Account
   (b) Debit of Bank Account
   (c) Credit of Realisation Account
   (d) Credit of Bank Account.
7. The accumulated profits and reserves are transferred to :
   (a) Realisation Account
   (b) Partners' Capital Accounts
   (c) Bank Account
   (d) None of the above.
8. On dissolution of the firm, partner's capital accounts are closed through:
   (a) Realisation Account
   (b) Drawings Account
   (c) Bank Account
   (d) Loan Account.

### *Illustration 2*

Sita, Rita and Meeta are partners sharing profit and losses in the ratio of 2:2:1 Their balance sheet as on March 31, 2017 is as follows:

**Balance Sheet of Sita, Rita and Meeta as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Reserve fund | | 2,500 | Cash at bank | 2,500 |
| Creditors | | 2,000 | Stock | 2,500 |
| Capitals: | | | Furniture | 1,000 |
| Sita | 5,000 | | Debtors | 2,000 |
| Rita | 2,000 | | Plant and Machinery | 4,500 |
| Meeta | 1,000 | 8,000 | | |
| | | **12,500** | | **12,500** |

They decided to dissolve the business. The following amounts were realised: Plant and Machinery Rs.4,250, Stock Rs.3,500, Debtors Rs.1850, Furniture 750.

Sita agreed to bear all realisation expenses. For the service Sita is paid Rs.60.

Actual expenses on realisation amounted to Rs.450.Creditors paid 2% less. There was an unrecorded assets of Rs.250, which was taken over by Rita at Rs.200.

Prepare the necessary accounts to close the books of the firm.

### *Solution*

**Books of Sita, Rita and Meeta**

*Dr.* **Realisation Account** *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| | | | Creditors | | 2,000 |
| Stock | | 2,500 | Rita's capital | | 200 |
| Furniture | | 1,000 | [Unrecorded assets] | | |
| Debtors | | 2,000 | Bank [assets realised]: | | |
| Plant and Machinery | | 4,500 | Plant and Machinery | 4,250 | |
| Bank [Creditors] | | 1,960 | Debtors | 1,850 | |
| Sita's capital | | 60 | Stock | 3,500 | |
| (realisation expenses] | | | Furniture | 750 | 10,350 |
| Profit transferred to: | | | | | |
| Sita's capital | 212 | | | | |
| Rita's capital | 212 | | | | |
| Meeta's capital | 106 | 530 | | | |
| | | **12,550** | | | **12,550** |

Dr. **Partner's Capital Accounts** Cr.

| Date | Particulars | J.F. | Sita (Rs.) | Rita (Rs.) | Meeta (Rs.) | Date | Particulars | J.F. | Sita (Rs.) | Rita (Rs.) | Meeta (Rs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Bank | | 450 | | | | Balance b/d | | 5,000 | 2,000 | 1,000 |
| | Realisation (asset) | | | 200 | | | Reserve fund | | 1,000 | 1,000 | 500 |
| | Bank | | 5,822 | 3,012 | 1,606 | | Realisation [profit] | | 212 | 212 | 106 |
| | | | | | | | Realisation (expenses) | | 60 | — | — |
| | | | **6,272** | **3,212** | **1,606** | | | | **6,272** | **3,212** | **1,606** |

Dr. **Bank Account** Cr.

| Date | Particulars | J.F. | Amount (Rs.) | Date | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 2,500 | | Realisation (Creditor) | | 1,960 |
| | Realisation (assets realised) | | 10,350 | | Sita's Capital [expenses] | | 450 |
| | | | | | Sita's Capital | | 5,822 |
| | | | | | Rita's Capital | | 3,012 |
| | | | | | Meeta's capital | | 1,606 |
| | | | **12,850** | | | | **12,850** |

### llustration 3

Nayana and Arushi were partners sharing profits equally Their Balance Sheet as on March 31, 2017 was as follows:

**Balance Sheet of Nayana and Arushi as on March 31, 2017**

| Liabilities | | Amount (Rs.) | Assets | Amount (Rs.) |
|---|---|---|---|---|
| Capitals: | | | Bank | 30,000 |
| Nayana | 1,00,000 | | Debtors | 25,000 |
| Arushi | 50,000 | 1,50,000 | Stock | 35,000 |
| Creditors | | 20,000 | Furniture | 40,000 |
| Arushi's current account | | 10,000 | Machinery | 60,000 |
| Workmen Compensation Fund | | 15,000 | Nayana's current account | 10,000 |
| Bank overdraft | | 5,000 | | |
| | | **2,00,000** | | **2,00,000** |

The firm was dissolved on the above date:

1. Nayana took over 50% of the stock at 10% less on its book value, and the remaining stock was sold at a gain of 15%. Furniture and Machinery realised for Rs.30,000 and Rs.50,000 respectively;
2. There was an unrecorded investment which was sold for Rs. 25,000;

3. Debtors realised 90% only and Rs.1,200 were recovered for bad debts written-off last year;
4. There was an outstanding bill for repairs which had to be paid for Rs.2,000.

Record necessary journal entries and prepare ledger accounts to close the books of the firm.

***Solution***

**Books of Nayana and Arushi**
**Journal**

| *Date 2017* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| | Realisation A/c | Dr. | | 1,60,000 | |
| | To Debtors | | | | 25,000 |
| | To Stock A/c | | | | 35,000 |
| | To Furniture A/c | | | | 40,000 |
| | To Machinery A/c | | | | 60,000 |
| | (Assets transferred to Realisation Account) | | | | |
| | Creditors A/c | Dr. | | 20,000 | |
| | Bank overdraft A/c | Dr. | | 5,000 | |
| | To Realisation A/c | | | | 25,000 |
| | (Liabilities transferred to Realisation Account) | | | | |
| | Realisation A/c | Dr. | | 27,000 | |
| | To Bank A/c | | | | 27,000 |
| | (Creditors, Bank overdraft, Outstanding repair bill paid) | | | | |
| | Bank A/c | Dr. | | 1,57,825 | |
| | To Realisation A/c | | | | 1,57,825 |
| | (Assets sold and bad debts recovered) | | | | |
| | Nayana's Capital A/c | Dr. | | 15,750 | |
| | To Realisation A/c | | | | 15,750 |
| | (Half stock take over by Nayana at 10% less) | | | | |
| | Realisation A/c | Dr. | | 15,575 | |
| | To Nayana's Current A/c | | | | 5,788 |
| | To Arushi's Current A/c | | | | 5,787 |
| | (Realisation profit transferred to partner's current account) | | | | |
| | Workman Compensation Fund A/c | Dr. | | 15,000 | |
| | To Nayana's Current A/c | | | | 7,500 |
| | To Arushi's Current A/c | | | | 7,500 |
| | (Compensation fund transfered to partners' Current account) | | | | |

| | | | | |
|---|---|---|---|---|
| | Arushi Current A/c Dr.<br>To Arushi's Capital A/c<br>(Current account balance transferred to Capital account) | | 23,287 | 23,287 |
| | Nayana Capital A/c Dr.<br>To Nayana's Current A/c<br>(Current account balance transferred to Capital account) | | 12,462 | 12,462 |
| | Nayana's Capital A/c Dr.<br>Arushi's Capital A/c Dr.<br>To Bank A/c<br>(Final amounts due to partners paid) | | 87,538<br>73,287 | 1,60,825 |

**Realisation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| | | | Creditors | | 20,000 |
| Debtors | 25,000 | | Bank overdraft | | 5,000 |
| Stock | 35,000 | | Bank: | | |
| Furniture | 40,000 | | Investment | 25,000 | |
| Machinery | 60,000 | 1,60,000 | Furniture | 30,000 | |
| Bank: | | | Machinery | 50,000 | |
| Creditors | 20,000 | | Debtors (90%) | 31,500 | |
| Bank overdraft | 5,000 | | Stock : | 20,125 | |
| Outstanding bill | 2,000 | 27,000 | Bad debts | | |
| Profit transferred to : | | | recovered | 1,200 | 1,57,825 |
| Nayana's capital | 5,788 | | Nayana's capital | | |
| Arushi's capital | 5,787 | 11,575 | (stock taken over) | | 15,750 |
| | | **1,98,575** | | | **1,98,575** |

**Partners' Current Accounts**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Nayana (Rs.)* | *Arushi (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Nayana (Rs.)* | *Arushi (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Balance b/d | | 10,000 | | | Balance b/d | | | 10,000 |
| | Realisation | | 15,750 | | | Workmen Compensation Fund | | 7,500 | 7,500 |
| | Arushi's capital | | | 23,287 | | Realisation (profit) | | 5,788 | 5,787 |
| | | | | | | Nayana's Capital | | 12,462 | |
| | | | **25,750** | **23,287** | | | | **25,750** | **23,287** |

**Partner's Current Accounts**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Nayana (Rs.)* | *Arushi (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Nayana (Rs.)* | *Arushi (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Nayana's current account | | 12,462 | | | Balance b/d | | 1,00,000 | 50,000 |
| | | | | | | Arushi's current account | | | 23,287 |
| | Bank | | 87,538 | 73,287 | | | | | |
| | | | **1,00,000** | **73,287** | | | | **1,00,000** | **73,287** |

**Bank Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 30,000 | | Realisation | | 27,000 |
| | Realisation | | 1,57,825 | | Nayana's capital | | 87,538 |
| | | | | | Arushi's capital | | 73,287 |
| | | | **1,87,825** | | | | **1,87,825** |

**Test your Understanding – III**

**Fill in the Correct Word(s):**

1. All assets (except cash/bank and fictitious assets) are transferred to the ———— (Debit/Credit) side of ———— Account (Realisation/Capital).
2. All ———— (internal/external) liabilities are transferred to the ———— (Debit/Credit) side of ————acccount (Bank/Realisation).
3. Accumulated losses are transferred to ———— (Current/Capital Accounts) in ———— (equal ratio/profit sharing ratio).
4. If a liability is assumed by a partner, such Partner's Capital Account is ———— (debited/credited).
5. If a partner takes over an asset, such (Partner's Capital Account) is ———— (debited/credited).
6. No entry is required when a ———— (partner/creditor) accepts a fixed asset in payment of his dues.
7. When creditor accepts an asset whose value is more than the amount due to him, he will ———— (pay/not pay) the excess amount which will be credited ———— Account.
8. When the firm has agreed to pay the partner a fixed amount for realisation work irrespective of the actual amount spent, such fixed amount is debited to (Realisation/Capital) Account and Credited to (Capital/Bank) Account.
9. Partner's loan is ———— (recorded/not recorded) in the (Realisation Account).
10. Partner's current accounts are transferred to respective ———— Partners' (Loan/Capital) Accounts.

### *Illustration 4*

Following is the Balance Sheet of Ashwani and Bharat on March 31, 2017.

**Balance Sheet Ashwani and Bharat as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Creditors | | 76,000 | Cash at bank | | 17,000 |
| Mrs.Ashwani's loan | | 10,000 | Stock | | 10,000 |
| Mrs.Bharat loan | | 20,000 | Investments | | 20,000 |
| Investment fluctuation fund | | 2,000 | Debtors | 40,000 | |
| Reserve fund | | 20,000 | *Less:* Provision | | |
| Capitals: | | | for doubtful debts | 4,000 | 36,000 |
| Ashwani | 20,000 | | Buildings | | 70,000 |
| Bharat | 20,000 | 40,000 | Goodwill | | 15,000 |
| | | **1,68,000** | | | **1,68,000** |

The firm was dissolved on that date. The following was agreed transactions took place.

(i) Aswhani promised to pay Mrs. Ashwani's loan and took away stock for Rs.8,000.

(ii) Bharat took away half of the investment at 10% less. Debtors realised for Rs.38,000. Creditor's were paid at less of Rs.380. Buildings realised for Rs.1,30,000, Goodwill Rs.12,000 and the remaining Investment were sold at Rs.9,000. An old typewriter not recorded in the books was taken over by Bharat for Rs. 600. Realisation expenses amounted to Rs. 2,000.

Prepare Realisation Account, Partner's Capital Account and Bank Account.

### *Solution*

**Books of Ashwani and Bharat**

*Dr.* **Realisation Account** *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Investment | 20,000 | | Provision for doubtful debts | | 4,000 |
| Debtors | 40,000 | | Creditors | | 76,000 |
| Buildings | 70,000 | | Mrs. Ashwani loan | | 10,000 |
| Stock | 10,000 | | Mrs. Bharat loan | | 20,000 |
| Goodwill | 15,000 | 1,55,000 | Investment fluctuation fund | | 2,000 |
| Ashwani's Capital | | 10,000 | Ashwani's Capital[stock] | | 8,000 |
| (Mrs.Ashwani's loan} | | | Bharat's capital (Typewriter) | | 600 |
| Bank (Mrs. Bharat's loan) | | 20,000 | Bharat's capital (Investment) | | 9,000 |
| Bank (creditors) | | 75,620 | Bank: | | |
| Bank (realisation expenses) | | 2,000 | Investment | 9,000 | |
| Profit transferred to: | | | Debtors | 38,000 | |
| Ashwani's Capital | 27,990 | | Buildings | 1,30,000 | |
| Bharat's Capital | 27,990 | 55,980 | Goodwill | 12,000 | 1,89,000 |
| | | **3,18,600** | | | **3,18,600** |

**Partner's Capital Accounts**

*Dr.* *Cr.*

| Date 2017 | Particulars | J.F. | Ashwani (Rs.) | Bharat (Rs.) | Date 2017 | Particulars | J.F. | Ashwani (Rs.) | Bharat (Rs.) |
|---|---|---|---|---|---|---|---|---|---|
| | Realisation (stock) | | 8,000 | — | | Balance b/d | | 20,000 | 20,000 |
| | Realisation [sale of typewriter] | | | 600 | | Reserve fund | | 10,000 | 10,000 |
| | Realisation [investment] | | | 9,000 | | Realisation [Mrs. Ashwini's loan] | | 10,000 | — |
| | Bank | | 59,990 | 48,390 | | Realisation (profit) | | 27,990 | 27,990 |
| | | | **67,990** | **57,990** | | | | **67,990** | **57,990** |

**Bank Account**

*Dr.* *Cr.*

| Date 2017 | Particulars | J.F. | Amount (Rs.) | Date 2017 | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 17,000 | | Realisation [creditors] | | 75,620 |
| | Realisation | | 1,89,000 | | Realisation [expenses] | | 2,000 |
| | | | | | Realisation (Mrs.Bharat's loan) | | 20,000 |
| | | | | | Ashwani's capital | | 59,990 |
| | | | | | Bharat's capital | | 48,390 |
| | | | **2,06,000** | | | | **2,06,000** |

**Do it Yourself**

Give the journal entry(ies) to be recorded for the following, in case of the dissolution of a partnership firm.

1. For closure of assets accounts.
2. For closure of liabilities accounts.
3. For sale of assets.
4. For settlement of a creditor by transfer of fixed assets to him.
5. For expenses of realisation when actual expenses are paid by the partner on behalf of the firm.
6. When a partner discharges the liability of the firm.
7. For payment of partner's loan.
8. For settlement of capital accounts.

### *Illustration 5*

Sonia, Rohit and Udit are partners sharing profits in the ratio of 5:3:2. Their Balance Sheet as on March 31, 2017 was as follows:

**Balance Sheet of Sonia, Rohit and Udit as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | | 30,000 | Buildings | 2,00,000 |
| Bills payable | | 30,000 | Machinery | 40,000 |
| Bank loan | | 1,20,000 | Stock | 1,60,000 |
| Sonia's husband's loan | | 1,30,000 | Bills receivable | 1,20,000 |
| General reserve | | 80,000 | Furniture | 80,000 |
| Capitals: | | | Cash at bank | 60,000 |
| Sonia | 70,000 | | | |
| Rohit | 90,000 | | | |
| Udit | 1,10,000 | 2,70,000 | | |
| | | **6,60,000** | | **6,60,000** |

The firm was dissolved on that date. Close the books of the firm with following information:

1. Buildings realised for Rs.1,90,000, Bills receivable realised for Rs.1,10,000; Stock realised Rs.1,50,000; and Machinery sold for Rs.48,000 and furniture for Rs. 75,000,
2. Bank loan was settled for Rs.1,30,000. Creditors and Bills payable were settled at 10% discount,
3. Rohit paid the realisation expenses of Rs.10,000 and he was to get a remuneration of Rs.12,000 for completing the dissolution process.

Prepare necessary ledger accounts.

***Solution***

**Books of Sonia, Rohit and Udit**

*Dr.* **Realisation Account** *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Buildings | 2,00,000 | | Creditors | | 30,000 |
| Machinery | 40,000 | | Bills payable | | 30,000 |
| Stock | 1,60,000 | | Bank loan | | 1,20,000 |
| Bills receivable | 1,20,000 | | Sonia's husband's loan | | 1,30,000 |
| Furniture | 80,000 | 6,00,000 | Bank: | | |
| Bank (Bank Loan) | | 1,30,000 | Buildings | 1,90,000 | |
| Bank | | | Bills receivable | 1,10,000 | |
| [creditors and Bills payable] | | 54,000 | Stock | 1,50,000 | |
| Bank [Sonia's husbands loan] | | 1,30,000 | Machinery | 48,000 | |
| Rohit's capital | | 12,000 | Furniture | 75,000 | 5,73,000 |
| (reslisation expenses) | | | Loss transferred to capital accounts: | | |
| | | | Sonia | 21,500 | |
| | | | Rohit | 12,900 | |
| | | | Udit | 8,600 | 43,000 |
| | | **9,26,000** | | | **9,26,000** |

**Partner's Capital Accounts**

Dr. Cr.

| Date 2017 | Particulars | J.F. | Sonia (Rs.) | Rohit (Rs.) | Udit (Rs.) | Date 2017 | Particulars | J.F. | Sonia (Rs.) | Rohit (Rs.) | Udit (Rs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Realisation (Loss) | | 21,500 | 12,900 | 8,600 | | Balance b/d | | 70,000 | 90,000 | 1,10,000 |
| | Bank | | 88,500 | 1,13,100 | 1,17,400 | | Realisation (expenses) | | — | 12,000 | — |
| | | | | | | | General reserve | | 40,000 | 24,000 | 16,000 |
| | | | **1,10,000** | **1,26,000** | **1,26,000** | | | | **1,10,000** | **1,26,000** | **1,26,000** |

**Bank Account**

Dr. Cr.

| Date 2017 | Particulars | J.F. | Amount (Rs.) | Date 2017 | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 60,000 | | Realisation [bank loan] | | 1,30,000 |
| | Realisation (assets realised) | | 5,73,000 | | Realisation [creditors and bills payable] | | 54,000 |
| | | | | | Realisation (Sonia's husband loan) | | 1,30,000 |
| | | | | | Sonia's capital | | 88,500 |
| | | | | | Rohit's capital | | 1,13,100 |
| | | | | | Udit's capital | | 1,17,400 |
| | | | **6,33,000** | | | | **6,33,000** |

*Note:* No entry has been recorded in firm's books for the actual realisation expenses incurred by Rohit because he gets Rs. 12,000 as his remuneration which has been duly accounted for.

### *Illustration 6*

Romesh and Bhawan were in partnership sharing profit and losses as 3:2. Their Balance Sheet as on March 31, 2017, was as follows:

**Balance Sheet of Romesh and Bhawan as on March 31, 2014**

| Liabilities | | Amount (Rs.) | Assets | Amount (Rs.) |
|---|---|---|---|---|
| Bank loan | | 60,000 | Cash at bank | 30,000 |
| Creditors | | 80,000 | Debtors | 70,000 |
| Bills payables | | 40,000 | Stock | 2,00,000 |
| Bhawan loan | | 20,000 | Investments | 1,40,000 |
| Capitals: | | | Buildings | 60,000 |
| Romesh | 1,00,000 | | | |
| Bhawan | 2,00,000 | 3,00,000 | | |
| | | **5,00,000** | | **5,00,000** |

They decided to dissolve the firm. The following information is available:

1. Debtors were recovered 5% less. Stock was realised at books value and building was sold for Rs.51,000,
2. It is found that investment not recorded in the books amounted to Rs.10,000. The same were accepted by one creditor for this amount and other Creditors were paid at a discount of 10%. Bills payable were paid full,
3. Romesh took over some of the Investments at Rs.8,100 (book value less 10%). The remaining investment were taken over by Bhawan at 90% of the book value less Rs.900 discount,
4. Bhawan paid bank loan along with one year interest at 6% p.a,
5. An unrecorded liability of Rs.5,000 paid.

Close the books of the firm and prepare necessary ledger accounts.

***Solution***

**Books of Romesh and Bhawan**
**Realisation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| | | | Bank loan | | 60,000 |
| Debtors | 70,000 | | Creditors | | 80,000 |
| Stock | 2,00,000 | | Bills payable | | 40,000 |
| Investments | 1,40,000 | | Romesh's Capital (investment) | | 8,100 |
| Buildings | 60,000 | 4,70,000 | Bhawan's Capital (investment) | | 1,17,000 |
| Bank (bills payable) | | 40,000 | Bank: | | |
| Bank (creditors) | | 63,000 | Debtors | 66,500 | |
| Bhawan's capital | | 63,600 | Stock | 2,00,000 | |
| (loan with interest) | | | Buildings | 51,000 | 3,17,500 |
| Bank (unrecorded liabilities) | | 5,000 | Loss transferred to : | | |
| | | | Romesh capital | 11,400 | |
| | | | Bhawan capital | 7,600 | 19,000 |
| | | **6,41,600** | | | **6,41,600** |

**Partner's Capital Accounts**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Romesh (Rs.)* | *Bhawan (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Romesh (Rs.)* | *Bhawan (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Realisation [investment] | | 8,100 | 1,17,000 | | Balance b/d | | 1,00,000 | 2,00,000 |
| | Realisation [loss] | | 11,400 | 7,600 | | Realisation [bank loan] | | | 63,600 |
| | Bank | | 80,500 | 1,39,000 | | | | | |
| | | | **1,00,000** | **2,63,600** | | | | **1,00,000** | **2,63,600** |

**Bank Account**

Dr. Cr.

| Date 2017 | Particulars | J.F. | Amount (Rs.) | Date 2017 | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 30,000 | | Realisation[creditor] | | 63,000 |
| | Realisation (assets realised) | | 3,17,500 | | Realisation [unrecorded liability] | | 5,000 |
| | | | | | Bhawan loan | | 20,000 |
| | | | | | Realisation (bills payable] | | 40,000 |
| | | | | | Romesh's capital | | 80,500 |
| | | | | | Bhawan's capital | | 1,39,000 |
| | | | **3,47,500** | | | | **3,47,500** |

*Note:* No entry has been made for acceptance of unrecorded investments by a creditor as part payment of his dues as per rules.

### *Illustration 7*

Sonu and Ashu sharing profits as 3:1 and they agree upon dissolution. The Balance Sheet as on March 31, 2017 is as under:

**Balance Sheet of Sonu and Ashu as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Loan | | 12,000 | Cash at bank | 25,000 |
| Creditors | | 18,000 | Stock | 45,000 |
| Capital | | | Furniture | 16,000 |
| Sonu | 1,10,000 | | Debtors | 70,000 |
| Ashu | 68,000 | 1,78,000 | Plant and Machinery | 52,000 |
| | | **208,000** | | **2,08,000** |

Sonu took over plant and machinery at an agreed value of Rs.60,000. Stock and Furniture were sold for Rs.42,000 and Rs.13,900 respectively. Debtors were took over by Ashu at Rs.69,000. Creditors were paid subject to discount of Rs.900. Sonu agrees to pay the loans. Realisation expenses were Rs.1,600.

Prepare Realisation Account, Bank Account and Capital Accounts of the Partners.

### *Solution*

**Books of Sonu and Ashu**
**Realisation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Stock | | 45,000 | Loan | | 12,000 |
| Furniture | | 16,000 | Creditors | | 18,000 |
| Debtors | | 70,000 | Sonu's capital (plant& machinery) | | 60,000 |
| Plant and Machinery | | 52,000 | Ashu's capital (debtors) | | 69,000 |
| Bank (creditors) | | 17,100 | Bank: | | |
| Sonu's capital (loan) | | 12,000 | Stock | 42,000 | |
| Bank (realisation expenses) | | 1,600 | Furniture | 13,900 | 55,900 |
| Profit transferred to : | | | | | |
| Sonu's capital | 900 | | | | |
| Ashu's capital | 300 | 1,200 | | | |
| | | **2,14,900** | | | **2,14,900** |

**Partners Capital Accounts**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Sonu (Rs.)* | *Ashu (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Sonu (Rs.)* | *Ashu (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|
| | Realisation [plant and machinery] | | 60,000 | | | Balance b/d | | 1,10,000 | 68,000 |
| | Realisation [debtors] | | | 69,000 | | Realisation [loan] | | 12,000 | |
| | Bank | | 62,900 | | | Realisation [profit] | | 900 | 300 |
| | | | | | | Bank | | | 700 |
| | | | **1,22,900** | **69,000** | | | | **1,22,900** | **69,000** |

**Bank Account**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 25,000 | | Realisation [creditor] | | 17,100 |
| | Realisation (assets realised) | | 55,900 | | Realisation [expenses] | | 1,600 |
| | Ashu's capital | | 700 | | Sonu's capital | | 62,900 |
| | | | **81,600** | | | | **81,600** |

### *Illustration 8*

Anju, Manju and Sanju sharing profit in the ratio of 3:1:1 decided to dissolve their firm. On March 31, 2014 their position was as follows:

**Balance Sheet Anju, Manju and Sanju as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Creditors | | 60,000 | Cash at bank | | 35,000 |
| Loan | | 15,000 | Stock | | 83,000 |
| Capitals: | | | Furniture | | 12,000 |
| Anju | 2,75,000 | | Debtors | 2,42,000 | |
| Manju | 1,10,000 | | *Less:* Provision for | | |
| Sanju | 1,00,000 | 4,85,000 | doubtful debts | 12,000 | 2,30,000 |
| | | | Buildings | | 2,00,000 |
| | | **5,60,000** | | | **5,60,000** |

It is agreed that:

1. Anju takes over the Furniture at Rs.10,000 and Debtors amounting to Rs.2,00,000 at Rs.1,85,000. Anju also agrees to pay the creditors,
2. Manju is to take over Stock at book value and Buildings at book value less 10%,
3. Sanju is to take over remaining Debtors at 80% of book value and responsibility for the discharge of the loan,
4. The expenses of dissolution amounted to Rs.2,200.

Prepare Realisation Account, Bank Account and Capital Accounts of the partners.

***Solution***

**Books of Anju, Manju and Sanju**

*Dr.* **Realisation Account** *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| | | | Provision for doubtful debts | | 12,000 |
| Stock | 83,000 | | Creditors | | 60,000 |
| Furniture | 12,000 | | Loan | | 15,000 |
| Debtors | 2,42,000 | | Anju's capital : | | |
| Buildings | 2,00,000 | 5,37,000 | Furniture | 10,000 | |
| Anju capital (creditors) | | 60,000 | Debtors | 1,85,000 | 1,95,000 |
| Sanju capital (loan) | | 15,000 | Manju's capital : | | |
| Bank (realisation expenses) | | 2,200 | Stock | 83,000 | |
| | | | Buildings | 1,80,000 | 2,63,000 |
| | | | Sanju's capital : | | |
| | | | (remaning debtors less | | |
| | | | 20% of book value) | | 33,600 |
| | | | Loss transferred to : | | |
| | | | Anju's capital | 21,360 | |
| | | | Manju's capital | 7,120 | |
| | | | Sanju's capital | 7,120 | 35,640 |
| | | **6,14,200** | | | **6,14,240** |

Dr. **Partner's Capital Accounts** Cr.

| Date 2017 | Particulars | J.F. | Anju (Rs.) | Manju (Rs.) | Sanju (Rs.) | Date 2017 | Particulars | J.F. | Anju (Rs.) | Manju (Rs.) | Sanju (Rs.) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Realisation (assets) | | 1,95,000 | 2,63,000 | 33,600 | | Balance b/d | | 2,75,000 | 1,10,000 | 1,00,000 |
| | Realisation (loss) | | 21,360 | 7,120 | 7,120 | | Realisation (creditors) | | 60,000 | | |
| | Bank | | 1,18,640 | | 74,280 | | Realisation (loan) | | | | 15,000 |
| | | | | | | | Bank | | | 1,60,120 | |
| | | | **3,35,000** | **2,70,120** | **1,15,000** | | | | **3,35,000** | **2,70,120** | **1,15,000** |

Dr. **Bank Account** Cr.

| Date 2017 | Particulars | J.F. | Amount (Rs.) | Date 2017 | Particulars | J.F. | Amount (Rs.) |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 35,000 | | Realisation (expenses) | | 2,200 |
| | Manju's capital | | 1,60,120 | | Anju's capital | | 1,18,640 |
| | | | | | Sanju's capital | | 74,280 |
| | | | **1,95,120** | | | | **1,95,120** |

***Illustration 9***

Sumit, Amit and Vinit are partners sharing profit in the ratio of 5:3:2. Their Balance Sheet as on March 31, 2017 was as follows:

**Balance Sheet of Sunit, Amit and Vinit as on March 31, 2017**

| Liabilities | | Amount (Rs.) | Assets | Amount (Rs.) |
|---|---|---|---|---|
| Capitals: | | | Machinery | 80,000 |
| Sumit | 40,000 | | Investments | 1,50,000 |
| Amit | 50,000 | | Stock | 10,000 |
| Vinit | 60,000 | 1,50,000 | Debtors | 35,000 |
| Profit and Loss | | 10,000 | Cash at bank | 15,000 |
| Mrs. Amit's loan | | 40,000 | | |
| Sundry creditors | | 90,000 | | |
| | | **2,90,000** | | **2,90,000** |

The firm was dissolved on that date. Amit took over his wife's loan. One of the Creditors for Rs.2,600 was not claim the amount. Other assets realised as follows:

1. Machinery was sold for Rs.70,000,
2. Investments with book value of Rs.1,00,000 were given to Creditors in full settlement of their account. The remaining Investments were took over by Vinit at an agreed value of Rs.45,000,

3. Stock was sold for Rs.11,000 and Debtors for Rs.3,000 proved to be bad,
4. Realisation expenses were Rs.1,500.

Prepare ledger accounts to close the books of the firm.

***Solution***

**Books of Amit, Sumit and Vinit**
**Realisation Account**

*Dr.* *Cr.*

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Machinery | 80,000 | | Sundry creditors | | 90,000 |
| Investments | 1,50,000 | | Mrs.Amit's loan | | 40,000 |
| Stock | 10,000 | | Bank : | | |
| Debtors | 35,000 | 2,75,000 | Machinery | 70,000 | |
| Amit's Capital (wife's loan) | | 40,000 | Stock | 11,000 | |
| Bank (realisation expenses) | | 1,500 | Debtors | 32,000 | 1,13,000 |
| | | | Vinit's capital (investment) | | 45,000 |
| | | | Loss transferred to : | | |
| | | | Amit's capital | 14,250 | |
| | | | Sumit's capital | 8,550 | |
| | | | Vinit's capital | 5,700 | 28,500 |
| | | **3,16,500** | | | **3,16,500** |

*Dr.* **Partners Capital Accounts** *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Amit (Rs.)* | *Sumit (Rs.)* | *Vinit (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Amit (Rs.)* | *Sumit (Rs.)* | *Vinit (Rs.)* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Realisation (assets) | | | | 45,000 | | Balance b/d | | 40,000 | 50,000 | 60,000 |
| | Realisation (loss) | | 14,250 | 8,550 | 5,700 | | Realisation (Mrs. Vinit's loan) | | 40,000 | | |
| | Bank | | 70,750 | 44,450 | 11,300 | | Profit and Loss | | 5,000 | 3,000 | 2,000 |
| | | | **85,000** | **53,000** | **62,000** | | | | **85,000** | **53,000** | **62,000** |

**Bank Account**

*Dr.* *Cr.*

| *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date 2017* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Balance b/d | | 15,000 | | Realisation (expenses) | | 1,500 |
| | Realisation (assets realised) | | 1,13,000 | | Amit's capital | | 70,750 |
| | | | | | Sumit's capital | | 44,450 |
| | | | | | Vinit's capital | | 11,300 |
| | | | **1,28,000** | | | | **1,28,000** |

*Note:* No entry has been made for the investments taken over by the creditors as per rules.

### *Illustration 10*

Meena and Tina are partners in a firm and sharing profit as 3:2. They decided to dissolve their firm on March 31, 2017 when their Balance Sheet was a follows:

**Balance Sheet Meena and Tina as on March 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capital : | | | Machinery | 70,000 |
| Meena | 90,000 | | Investments | 50,000 |
| Tina | 80,000 | 1,70,000 | Stock | 22,000 |
| Sundry creditors | | 60,000 | Sundry Debtors | 1,03,000 |
| Bills payable | | 20,000 | Cash at bank | 5,000 |
| | | **2,50,000** | | **2,50,000** |

The assets and liabilities were disposed off as follows :

(a) Machinery were given to creditors in full settlement of their account and Stock were given to bills payable in full settlement.

(b) Investment were took over by Tina at book value. Sundry debtors of book value Rs. 50,000 took over by Meena at 10% less and remaining debtors realised Rs. 51,000.

(c) Realisation expenses amount to Rs. 2,000.

Prepare necessary ledger accounts to close the book of the firm.

### *Solution*

**Books of Meena and Tina – Realisation Account**

| *Particulars* | | *Amount (Rs.)* | *Particulars* | | *Amount (Rs.)* |
|---|---|---|---|---|---|
| Assets transferred : | | | Sundry creditors | | 60,000 |
| Machinery | 70,000 | | Bills payable | | 20,000 |
| Investments | 50,000 | | Tina's Capital (investment) | | 50,000 |
| Stock | 22,000 | | Meena's Capital (debtors of | | 45,000 |
| Sundry debtors | 1,03,000 | 2,45,000 | books value Rs. 50,000 | | |
| Bank (realisation expenses) | | 2,000 | less 10%) | | |
| | | | Bank | | |
| | | | Debtors | | 51,000 |
| | | | Loss transferred to : | | |
| | | | Meena's capital | 12,600 | |
| | | | Tena's capital | 8,400 | 21,000 |
| | | **2,47,000** | | | **2,47,000** |

**Partner's Capital Accounts**

*Dr.* *Cr.*

| *Particulars* | *Mena (Rs.)* | *Tina (Rs.)* | *Particulars* | *Meena (Rs.)* | *Tina (Rs.)* |
|---|---|---|---|---|---|
| Realisation (investment) | | 50,000 | Balance b/d | 90,000 | 80,000 |
| Realisation (debtors) | 45,000 | | | | |
| Realisation (loss) | 12,600 | 8,400 | | | |
| Bank | 32,400 | 21,600 | | | |
| | **90,000** | **80,000** | | **90,000** | **80,000** |

**Bank Account**

*Dr.* *Cr.*

| *Particulars* | *Amount (Rs.)* | *Particulars* | *Amount (Rs.)* |
|---|---|---|---|
| Balance b/d | 5,000 | Realisation (expenses) | 2,000 |
| Realisation (assets realised) | 51,000 | Mena's capital | 32,400 |
| | | Tina's capital | 21,600 |
| | **56,000** | | **56,000** |

## *Terms Introduced in the Chapter*

1. Dissolution of Partnership
2. Dissolution of Partnership Firm
3. Partnership at Will
4. Compulsory Dissolution
5. Dissolution by Notice
6. Realisation Expenses
7. Realisation Account

## *Summary*

1. *Dissolution of Partnership Firm :* The dissolution of a firm implies the discontinuance of partnership business and separation of economic relations between the partners. In the case of a dissolution of a firm, the firm closes its business altogether and realises all its assets and pays all its liabilities. The payment is made to the creditors first out of the assets realised and, if necessary, next out of the contributions made by the partners in their profit sharing ratio. When all accounts are settled and the final payment is made to the partners for the amounts due to them, the books of the firm are closed.
2. *Dissolution of Partnership :* A partnership gets terminated in case of admission, retirement death, etc. of a partner. This does not necessarily involve dissolution of the firm.
3. *Realisation Account :* The Realisation Account is prepared to record the transactions relating to sale and realisation of assets and settlement of creditors. Any profit or loss arising act of this process is shared by partners' in their profit sharing ratio. Partners' accounts are also settled and the Cash or Bank account is closed.

## *Questions for Practice*

**Short Answer Questions**

1. State the difference between dissolution of partnership and dissolution of partnership firm.
2. State the accounting treatment for:
   i. Unrecorded assets ii. Unrecorded liabilities
3. On dissolution, how will you deal with partner's loan if it appears on the (a) assets side of the balance sheet, (b) liabilities side of balance sheet.

4. Distinguish between firm's debts and partner's private debts.
5. State the order of settlement of accounts on dissolution.
6. On what account realisation account differs from revaluation account.

**Long Answer Questions**

1. Explain the process dissolution of partnership firm?
2. What is a Realisation Account?
3. Reproduce the format of Realisation Account.
4. How deficiency of crditors is paid off?

## Numerical Questions

1. Journalise the following transactions regarding realisation expenses :
   [a] Realisation expenses amounted to Rs.2,500.
   [b] Realisation expenses amounting to Rs.3,000 were paid by Ashok, one of the partners.
   [c] Realisation expenses Rs.2,300 borne by Tarun, personally.
   [d] Amit, a partner was appointed to realise the assets, at a cost of Rs.4,000. The actual amount of realisation amounted to Rs.3,000.
2. Record necessary journal entries in the following cases:
   [a] Creditors worth Rs.85,000 accepted Rs.40,000 as cash and Investment worth Rs.43,000, in full settlement of their claim.
   [b] Creditors were Rs.16,000. They accepted Machinery valued at Rs.18,000 in settlement of their claim.
   [c] Creditors were Rs.90,000. They accepted Buildings valued Rs.1,20,000 and paid cash to the firm Rs.30,000.
3. There was an old computer which was written-off in the books of accounts in the pervious year. The same has been taken over by a partner Nitin for Rs.3,000. Journalise the transaction, supposing. That the firm has been dissolved.
4. What journal entries will be recorded for the following transactions on the dissolution of a firm:
   [a] Payment of unrecorded liabilities of Rs.3,200.
   [b] Stock worth Rs.7,500 is taken by a partner Rohit.
   [c] Profit on Realisation amounting to Rs.18,000 is to be distributed between the partners Ashish and Tarun in the ratio of 5:7.
   [d] An unrecorded asset realised Rs.5,500.
5. Give journal entries for the following transactions :
   1. To record the realisation of various assets and liabilities,
   2. A Firm has a Stock of Rs. 1,60,000. Aziz, a partner took over 50% of the Stock at a discount of 20%,
   3. Remaining Stock was sold at a profit of 30% on cost,
   4. Land and Buildging (book value Rs. 1,60,000) sold for Rs. 3,00,000 through a broker who charged 2%, commission on the deal,
   5. Plant and Machinery (book value Rs. 60,000) was handed over to a Creditor at an agreed valuation of 10% *less* than the book value,
   6. Investment whose face value was Rs. 4,000 was realised at 50%.

6. How will you deal with the realisation expenses of the firm of Rashim and Bindiya in the following cases:
   1. Realisation expenses amounts to Rs. 1,00,000,
   2. Realisation expenses amounting to Rs. 30,000 are paid by Rashim, a partner.
   3. Realisation expenses are to be borne by Rashim for which he will be paid Rs. 70,000 as remuneration for completing the dissolution process. The actual expenses incurred by Rashim were Rs. 1,20,000.

7. The book value of assets (other than cash and bank) transferred to Realisation Account is Rs. 1,00,000. 50% of the assets are taken over by a partner Atul, at a discount of 20%; 40% of the remaining assets are sold at a profit of 30% on cost; 5% of the balance being obsolete, realised nothing and remaining assets are handed over to a Creditor, in full settlement of his claim.

   You are required to record the journal entries for realisation of assets.

8. Record necessary journal entries to record the following unrecorded assets and liabilities in the books of Paras and Priya:
   1. There was an old furniture in the firm which had been written-off completely in the books. This was sold for Rs. 3,000,
   2. Ashish, an old customer whose account for Rs. 1,000 was written-off as bad in the previous year, paid 60%, of the amount,
   3. Paras agreed to takeover the firm's goodwill (not recorded in the books of the firm), at a valuation of Rs. 30,000,
   4. There was an old typewriter which had been written-off completely from the books. It was estimated to realize Rs. 400. It was taken away by Priya at an estimated price less 25%,
   5. There were 100 shares of Rs. 10 each in Star Limited acquired at a cost of Rs. 2,000 which had been written-off completely from the books. These shares are valued @ Rs. 6 each and divided among the partners in their profit sharing ratio.

9. All partners wishes to dissolve the firm. Yastin, a partner wants that her loan of Rs. 2,00,000 must be paid off before the payment of capitals to the partners. But, Amart, another partner wants that the capitals must be paid before the payment of Yastin's loan. You are required to settle the conflict giving reasons.

10. What journal entries would be recorded for the following transactions on the dissolution of a firm after various assets (other than cash) on the third party liabilities have been transferred to Reliasation account.
    1. Arti took over the Stock worth Rs. 80,000 at Rs. 68,000.
    2. There was unrecorded Bike of Rs. 40,000 which was taken over By Mr. Karim.
    3. The firm paid Rs. 40,000 as compensation to employees.
    4. Sundry creditors amounting to Rs. 36,000 were settled at a discount of 15%.
    5. Loss on realisation Rs. 42,000 was to be distributed between Arti and Karim in the ratio of 3:4.

11. Rose and Lily shared profits in the ratio of 2:3. Their Balance Sheet on March 31, 2017 was as follows:

**Balance Sheet of Rose and Lily as on March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | | *Amount (Rs.)* |
|---|---|---|---|---|
| Creditors | 40,000 | Cash | | 16,000 |
| Lily's loan | 32,000 | Debtors | 80,000 | |
| Profit and Loss | 50,000 | *Less*: Provision for | | |
| *Capitals:* | | doubtful debts | 3,600 | 76,400 |
| Lily | 1,60,000 | Inventory | | 1,09,600 |
| Rose | 2,40,000 | Bills receivable | | 40,000 |
| | | Buildings | | 2,80,000 |
| | **5,22,000** | | | **5,22,000** |

Rose and Lily decided to dissolve the firm on the above date. Assets (except bills receivables) realised Rs. 4,84,000. Creditors agreed to take Rs. 38,000. Cost of realisation was Rs. 2,400. There was a Motor Cycle in the firm which was bought out of the firm's money, was not shown in the books of the firm. It was now sold for Rs. 10,000. There was a contingent liability in respect of outstanding electric bill of Rs. 5,000 Bill Receivable taken over by Rose at Rs. 33,000.

Show Realisation Account, Partners Capital Acount, Loan Account and Cash Account.

(**Ans :** Realisation Profit Rs. 15,600, Total of Cash Account Rs. 5,10,000)

12. Shilpa, Meena and Nanda decided to dissolve their partnership on March 31,2017. Their profit sharing ratio was 3:2:1 and their Balance Sheet was as under:

**Balance Sheet of Shilpa, Meena and Nanda as on March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Capitals: | | Land | 81,000 |
| Shilpa | 80,000 | Stock | 56,760 |
| Meena | 40,000 | Debtors | 18,600 |
| Bank loan | 20,000 | Nanda's capital | 23,000 |
| Creditors | 37,000 | Cash | 10,840 |
| Provision for doubtful debts | 1,200 | | |
| General reserve | 12,000 | | |
| | **1,90,200** | | **1,90,200** |

The stock of value of Rs. 41,660 are taken over by Shilpa for Rs. 35,000 and she agreed to discharge bank loan. The remaining stock was sold at Rs. 14,000 and debtors amounting to Rs. 10,000 realised Rs. 8,000. land is sold for Rs. 1,10,000. The remaining debtors realised 50% at their book value. Cost of realisation amounted to Rs. 1,200. There was a typewriter not recorded in the books worth Rs. 6,000 which were taken over by one of the Creditors at this value. Prepare Realisation Account.
(**Ans :** Profit on Realisation Rs. 20,940, Total of Cash Account Rs. 1,64,650)

13. Surjit and Rahi were sharing profits (losses) in the ratio of 3:2, their Balance Sheet as on March 31, 2017 is as follows:

**Balance Sheet of Surjit and Rahi as on March 31, 2017**

| *Liabilities* | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|
| Creditors | 38,000 | Bank | 11,500 |
| Mrs. Surjit loan | 10,000 | Stock | 6,000 |
| Reserve | 15,000 | Debtors | 19,000 |
| Rahi's loan | 5,000 | Furniture | 4,000 |
| Capital's: | | Plant | 28,000 |
| Surjit | 10,000 | Investment | 10,000 |
| Rahi | 8,000 | Profit and Loss | 7,500 |
| | **86,000** | | **86,000** |

The firm was dissolved on March 31, 2017 on the following terms:
1. Surjit agreed to take the investments at Rs. 8,000 and to pay Mrs. Surojit's loan.
2. Other assets were realised as follows:
   Stock Rs. 5,000
   Debtors Rs. 18,500
   Furniture Rs. 4,500
   Plant Rs. 25,000
3. Expenses on realisation amounted to Rs. 1,600.
4. Creditors agreed to accept Rs. 37,000 as a final settlement.
   You are required to prepare Realisation account, Partner's Capital account and Bank account.

(**Ans :** Loss on Realisation Rs. 6,600, Total of Cash Account Rs. 64,500)

14. Rita, Geeta and Ashish were partners in a firm sharing profits/losses in the ratio of 3:2:1. On March 31, 2017 their balance sheet was as follows:

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capitals: | | | Cash | 22,500 |
| Rita | 80,000 | | Debtors | 52,300 |
| Geeta | 50,000 | | Stock | 36,000 |
| Ashish | 30,000 | 1,60,000 | Investments | 69,000 |
| Creditors | | 65,000 | Plant | 91,200 |
| Bills payable | | 26,000 | | |
| General reserve | | 20,000 | | |
| | | **2,71,000** | | **2,71,000** |

On the date of above mentioned date the firm was dissolved:

1. Rita was appointed to realise the assets. Rita was to receive 5% commission on the rate of assets (except cash) and was to bear all expenses of realisation,
2. Assets were realised as follows:

| | *Rs.* |
|---|---|
| Debtors | 30,000 |
| Stock | 26,000 |
| Plant | 42,750 |

3. Investments were realised at 85% of the book value,
4. Expenses of realisation amounted to Rs. 4,100,
5. Firm had to pay Rs. 7,200 for outstanding salary not provided for earlier,
6. Contingent liability in respect of bills discounted with the bank was also materialised and paid off Rs. 9,800,

Prepare Realisation account, Capital Accounts of Partner's and Cash Account.

(**Ans :** Loss on Realisation Rs. 1,15,970, Total of Cash Account Rs. 1,65,705)

15. Anup and Sumit are equal partners in a firm. They decided to dissolve the parntership on December 31, 2017. When the balance sheet is as under :

**Balance Sheet of Anup and Sumit as on December 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 27,000 | Cash at bank | 11,000 |
| Reserve fund | | 10,000 | Sundry Debtors | 12,000 |
| Loan | | 40,000 | Plants | 47,000 |
| Capital | | | Stock | 42,000 |
| Anup | 60,000 | | Lease hold land | 60,000 |
| Sumit | 60,000 | 1,20,000 | Furniture | 25,000 |
| | | **1,97,000** | | **1,97,000** |

The Assets were realised as follows :

| | *Rs.* |
|---|---|
| Lease hold land | 72,000 |
| Furniture | 22,500 |
| Stock | 40,500 |
| Plant | 48,000 |
| Sundry Debtors | 10,500 |

The Creditors were paid Rs. 25,500 in full settlement. Expenses of realisation amount to Rs. 2,500.

Prepare Realisation Account, Bank Account, Partners Capital Accounts to close the books of the firm.

(**Ans :** Realisation Profit Rs. 6,500)

16. Ashu and Harish are partners sharing profit and losses as 3:2. They decided to dissolve the firm on December 31, 2017. Their balance sheet on the above date was:

**Balance Sheet of Ashu and Harish as on December 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capitals: | | | Building | 80,000 |
| Ashu | 1,08,000 | | Machinery | 70,000 |
| Harish | 54,000 | 1,62,000 | Furniture | 14,000 |
| Creditors | | 88,000 | Stock | 20,000 |
| Bank overdraft | | 50,000 | Investments | 60,000 |
| | | | Debtors | 48,000 |
| | | | Cash in hand | 8,000 |
| | | **3,00,000** | | **3,00,000** |

Ashu is to take over the building at Rs. 95,000 and Machinery and Furniture is take over by Harish at value of Rs. 80,000. Ashu agreed to pay Creditor and Harish agreed to meet Bank overdraft. Stock and Investments are taken by both partner in profit sharing ratio. Debtors realised for Rs. 46,000, expenses of realisation amounted to Rs. 3,000. Prepare necessary ledger account.

(**Ans :** Loss on Realisation Rs. 6,000, Cash/Bank Total Rs. 59,600)

17. Sanjay, Tarun and Vineet shared profit in the ratio of 3:2:1. On December 31,2017 their balance sheet was as follows :

**Balance Sheet of Sanjay, Tarun and Vineet as on December 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Capitals: | | | Plant | 90,000 |
| Sanjay | 1,00,000 | | Debtors | 60,000 |
| Tarun | 1,00,000 | | Furniture | 32,000 |
| Vineet | 70,000 | 2,70,000 | Stock | 60,000 |
| Creditors | | 80,000 | Investments | 70,000 |
| Bills payable | | 30,000 | Bills receivable | 36,000 |
| | | | Cash in hand | 32,000 |
| | | **3,80,000** | | **3,80,000** |

On this date the firm was dissolved. Sanjay was appointed to realise the assets. Sanjay was to receive 6% commission on the sale of assets (except cash) and was to bear all expenses of realisation.
Sanjay realised the assets as follows : Plant Rs. 72,000, Debtors Rs. 54,000, Furniture Rs. 18,000, Stock 90% of the book value, Investments Rs. 76,000 and Bills receivable Rs.31,000. Expenses of realisation amounted to Rs.4,500. Prepare Realisation Account, Capital Accounts and Cash Account

(**Ans :** Loss on Realisation Rs.61,300, Total of Cash Account Rs.3,37,000)

18. The following is the Balance Sheet of Gupta and Sharma as on December 31,2017:

**Balance Sheet of Gupta and Sharma as on December 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 38,000 | Cash at bank | 12,500 |
| Mrs.Gupta's loan | | 20,000 | Sundry Debtors | 55,000 |
| Mrs.Sharma's loan | | 30,000 | Stock | 44,000 |
| Reserve fund | | 6,000 | Bills receivable | 19,000 |
| Provision of doubtful debts | | 4,000 | Machinery | 52,000 |
| Capital | | | Investment | 38,500 |
| Gupta | 90,000 | | Fixtures | 27,000 |
| Sharma | 60,000 | 1,50,000 | | |
| | | **2,48,000** | | **2,48,000** |

The firm was dissolved on December 31, 2017 and asset realised and settlements of liabilities as follows:

(a) The realisation of the assets were as follows:

| | Rs. |
|---|---|
| Sundry Debtors | 52,000 |
| Stock | 42,000 |
| Bills receivable | 16,000 |
| Machinery | 49,000 |

(b) Investment was taken over by Gupta at agreed value of Rs.36,000 and agreed to pay of Mrs. Gupta's loan.

(c) The Sundry Creditors were paid off *less* 3% discount.

(d) The realisation expenses incurred amounted to Rs.1,200.

Journalise the entries to be made on the dissolution and prepare Realisation Account, Bank Account and Partners Capital Accounts.

(**Ans :** Loss on Realisation Rs.36,560, Total of Cash Account)

19. Ashok, Babu and Chetan are in partnership sharing profit in the proportion of 1/2, 1/3, 1/6 respectively. They dissolve the partnership of the December 31, 2017, when the balance sheet of the firm as under:

**Balance Sheet of Ashok, Babu and Chetan as on December 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 20,000 | Bank | 7,500 |
| Bills payable | | 25,500 | Sundry Debtors | 58,000 |
| Babu's loan | | 30,000 | Stock | 39,500 |
| Capital's : | | | Machinery | 48,000 |
| Ashok | 70,000 | | Investment | 42,000 |
| Babu | 55,000 | | Freehold property | 50,500 |
| Chetan | 27,000 | 1,52,000 | | |
| Current accounts : | | | | |
| Ashok | 10,000 | | | |
| Babu | 5,000 | | | |
| Chetan | 3,000 | 18,000 | | |
| | | **2,45,500** | | **2,45,500** |

The machinery was taken over by Babu for Rs.45,000, Ashok took over the Investment for Rs.40,000 and Freehold property took over by Chetan at Rs.55,000. The remaining Assets realised as follows: Sundry Debtors Rs.56,500 and Stock Rs.36,500. Sundry Creditors were settled at discount of 7%. A Office computer, not shown in the books of accounts realised Rs.9,000. Realisation expenses amounted to Rs.3,000.

Prepare Realisation Account, Partners Capital Account, Bank Account.

(**Ans :** Profit on Realisation Rs.2,400, Total of Cash Account Rs.1,34,100)

20. The following is the Balance sheet of Tanu and Manu, who shares profit and losses in the ratio of 5:3, On December 31,2017:

**Balance Sheet of Tanu and Manu as on December 31, 2017**

| *Liabilities* | | *Amount (Rs.)* | *Assets* | *Amount (Rs.)* |
|---|---|---|---|---|
| Sundry Creditors | | 62,000 | Cash at bank | 16,000 |
| Bills payable | | 32,000 | Sundry Debtors | 55,000 |
| Bank loan | | 50,000 | Stock | 75,000 |
| Reserve fund | | 16,000 | Motor car | 90,000 |
| Capital | | | Machinery | 45,000 |
| Tanu | 1,10,000 | | Investment | 70,000 |
| Manu | 90,000 | 2,00,000 | Fixtures | 9,000 |
| | | **3,60,000** | | **3,60,000** |

On the above date the firm is dissolved and the following agreement was made: Tanu agree to pay the bank loan and took away the sundry debtors. Sundry creditors accepts stock and paid Rs.10,000 to the firm. Machinery is taken over by Manu for Rs.40,000 and agreed to pay of bills payable at a discount of 5%.. Motor car was taken over by Tanu for Rs.60,000. Investment realised Rs.76,000 and fixtures Rs.4,000. The expenses of dissolution amounted to Rs.2,200.
Prepare Realisation Account, Bank Account and Partners Capital Accounts.
(**Ans :** Loss on Ralisation Rs.37,600, Total of Cash Account Rs.1,06,000)

### *Check-list to Check your Understanding*

*Test your Understanding – I*
1. True, 2 True, 3. True, 4. False, 5. True, 6. True, 7. True, 8. False.

*Test your Understanding – II*
1. (c), 2. (d), 3. (b), 4. (d), 5. (c), 6. (a), 7. (b), 8. (c)

*Test your Understanding – III*
1. Debit, Realisaton, 2. External, Credit, Realisation, 3. Capital Accounts, Profit sharing ratio. 4. Credited, 5. Debited, 6. Creditor, 7. Pay, Realisation, 8. Realisation, Capital, 9. Not recorded, 10. Capital.

# Accounting for Share Capital

1

**Learning Objectives**

*After studying this chapter, you will be able to :*

- *explain the basic nature of a joint stock company as a form of business organisation and the various kinds of companies based on liability of their members;*
- *describe the types of shares issued by a company;*
- *explain the accounting treatment of shares issued at par, at premium and at discount including oversubsription;*
- *outline the accounting for forfeiture of shares and reissue of forfeited shares under varying situations;*
- *workout the amounts to be transferred to capital reserve when forfeited shares are reissued; and prepare share forfeited account ;*

A company form of organisation is the third stage in the evolution of forms of organisation. Its capital is contributed by a large number of persons called shareholders who are the real owners of the company. But neither it is possible for all of them to participate in the management of the company nor considered desirable. Therefore, they elect a Board of Directors as their representative to manage the affairs of the company. In fact, all the affairs of the company are governed by the provisions of the Companies Act, 2013. A company means a company incorporated or registered under the Companies Act, 2013 or under any other earlier Companies Acts. According to Chief Justice Marshal, "a company is a person, artificial, invisible, intangible and existing only in the eyes of law. Being a mere creation of law, it possesses only those properties which the charter of its creation confers upon it, either expressly or as incidental to its very existence".

A company usually raises its capital in the form of shares (called share capital) and debentures (debt capital.) This chapter deals with the accounting for share capital of companies.

## 1.1 Features of a Company

A company may be viewed as an association of person who contribute money or money's worth to a common inventory and use it for a common purpose. It is an artificial person having corporate legal entity distinct from its members (shareholders) and has a common seal used for its signature. Thus, it has certain special features which distinguish it from the other forms of organisation. These are as follows:

- *Body Corporate:* A company is formed according to the provisions of Law enforced from time to time. Generally, in India, the companies are formed and registered under Companies Law except in the case of Banking and Insurance companies for which a separate Law is provided for.
- *Separate Legal Entity:* A company has a separate legal entity which is distinct and separate from its members. It can hold and deal with any type of property. It can enter into contracts and even open a bank account in its own name.
- *Limited Liability:* The liability of the members of the company is limited to the extent of unpaid amount of the shares held by them. In the case of the companies limited by guarantee, the liability of its members is limited to the extent of the guarantee given by them in the event of the company being wound up.
- *Perpetual Succession:* The company being an artificial person created by law continues to exist irrespective of the changes in its membership. A company can be terminated only through law. The death or insanity or insolvency of any member of the company in no way affects the existence of the company. Members may come and go but the company continues.
- *Common Seal:* The company being an artificial person, cannot sign its name by itself. Therefore, every company is required to have its own seal which acts as official signatures of the company. Any document which does not carry the common seal of the company is not binding on the company.
- *Transferability of Shares:* The shares of a public limited company are freely transferable. The permission of the company or the consent of any member of the company is not necessary for the transfer of shares. But the Articles of the company can prescribe the manner in which the transfer of shares will be made.
- *May Sue or be Sued:* A company being a legal person can enter into contracts and can enforce the contractual rights against others. It can sue and be sued in its name if there is a breach of contract by the company.

## 1.2 Kinds of Companies

Companies can be classified either on the basis of the liability of its members or on the basis of the number of members. On the basis of liability of its members the companies can be classified into the following three categories:

(i) *Companies Limited by Shares:* In this case, the liability of its members is limited to the extent of the nominal value of shares held by them. If a member has paid the full amount of the shares, there is no liability on his part whatsoever may be the debts of the company. He need not pay a single paise from his private property. However, if there is any liability involved, it can be enforced during the existence of the company as well as during the winding up.

(ii) *Companies Limited by Guarantee:* In this case, the liability of its members is limited to the amount they undertake to contribute in the event of the company being wound up. Thus, the liability of the members will arise only in the event of its winding up.

(iii) *Unlimited Companies:* When there is no limit on the liability of its members, the company is called an unlimited company. When the company's property is not sufficient to pay off its debts, the private property of its members can be used for the purpose. In other words, the creditors can claim their dues from its members. Such companies are not found in India even though permitted by the Companies Act.

On the basis of the number of members, companies can be divided into three categories as follows:

(i) *Public Company*: A public company means a company which (a) is not a private company; (b) is a company which is not a subsidiary of a private company.

(ii) *Private Company*: A private company is one which by its articles:
   (a) Restricts the right to transfer its shares;
   (b) A private company must have at least 2 persons, except in case of one person company;
   (c) Limits the number of its members to 200 (excluding its employees);

(iii) *One Person Company (OPC)*: Sec. 2 (62) of the companies Act, 2013, defines OPC as a "company which has only one person as a member". Rule 3 of the Companies (Incorporation) Rules, 2014 provides that:
   (a) Only a natural person being an Indian citizen and resident in India can form one person company,
   (b) It cannot carry out non-banking financial investment activities.
   (c) Its paid up share capital is not more than Rs. 50 Lakhs
   (d) Its average annual turnover of three years does not exceed Rs. 2 Crores.

## 1.3 Share Capital of a Company

A company, being an artificial person, cannot generate its own capital which has necessarily to be collected from several persons. These persons are known as shareholders and the amount contributed by them is called share capital. Since the number of shareholders is very very large, a separate capital account cannot be opened for each one of them. Hence, innumerable streams of capital contribution merge their identities in a common capital account called as 'Share Capital Account'.

### 1.3.1 Categories of Share Capital

From accounting point of view the share capital of the company can be classified as follows:

- *Authorised Capital:* Authorised capital is the amount of share capital which a company is authorised to issue by its Memorandum of Association. The company cannot raise more than the amount of capital as specified in the Memorandum of Association. It is also called Nominal or Registered capital. The authorised capital can be increased or decreased as per the procedure laid down in the Companies Act. It should be noted that the company need not issue the entire authorised capital for public subscription at a time. Depending upon its requirement, it may issue share capital but in any case, it should not be more than the amount of authorised capital.
- *Issued Capital:* It is that part of the authorised capital which is actually issued to the public for subscription including the shares allotted to vendors and the signatories to the company's memorandum. The authorised capital which is not offered for public subscription is known as 'unissued capital'. Unissued capital may be offered for public subscription at a later date.
- *Subscribed Capital:* It is that part of the issued capital which has been actually subscribed by the public. When the shares offered for public subscription are subscribed fully by the public the issued capital and subscribed capital would be the same. It may be noted that ultimately, the subscribed capital and issued capital are the same because if the number of share, subscribed is less than what is offered, the company allot only the number of shares for which subscription has been received. In case it is higher than what is offered, the allotment will be equal to the offer. In other words, the fact of over subscription is not reflected in the books.
- *Called up Capital:* It is that part of the subscribed capital which has been called up on the shares. The company may decide to call the entire amount or part of the face value of the shares. For example, if the face value (also called nominal value) of a share allotted is Rs. 10 and the company has called up only Rs. 7 per share, in that scenario, the called up capital is Rs. 7 per share. The remaining Rs. 3 may be collected from its shareholders as and when needed.
- *Paid up Capital:* It is that portion of the called up capital which has been actually received from the shareholders. When the shareholders have paid all the call amount, the called up capital is the same to the paid up capital. If any of the shareholders has not paid amount on calls, such an amount may be called as 'calls in arrears'. Therefore, paid up capital is equal to the called-up capital minus call in arrears.
- *Uncalled Capital:* That portion of the subscribed capital which has not yet been called up. As stated earlier, the company may collect this amount any time when it needs further funds.

- *Reserve Capital:* A company may reserve a portion of its uncalled capital to be called only in the event of winding up of the company. Such uncalled amount is called 'Reserve Capital' of the company. It is available only for the creditors on winding up of the company.

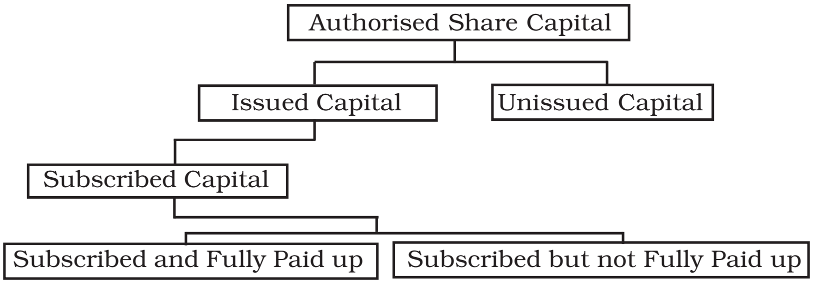


**Exhibit. 1.1 :** *Categories of Share Capital*

Let us take the following example and show how the share capital will be shown in the balance sheet. Sunrise Company Ltd., New Delhi, has registered its capital as Rs. 40,00,000, divided into 4,00,000 shares of Rs. 10 each. The company offered to the public for subscription of 2,00,000 shares of Rs. 10 each, as Rs. 2 on application, Rs.3 on allotment, Rs.3 on first call and the balance on final call. The company received applications for 2,50,000 shares. The company finalised the allotment on 2,00,000 shares and rejected applications for 50,000 shares. The company did not make the final call. The company received all the amount except on 2,000 shares where call money has not been received. The above amounts will be shown in the Notes to Accounts of the balance sheet of Sunrise Company Ltd. as follows:

**Notes to Accounts**

| Share Capital | | *(Rs.)* |
|---|---|---|
| Authorised or Registered or Nominal Capital: | | |
| 4,00,000 Shares of Rs. 10 each | | 40,00,000 |
| Issued Capital | | |
| 2,00,000 Shares of Rs. 10 each | | 20,00,000 |
| Subscribed Capital | | |
| Subscribed but not fully paid up | | |
| 2,00,000 Shares of Rs. 10 each, Rs. 8 called up | 16,00,000 | |
| *Less :* Calls in Arrears | (6,000) | 15,94,000 |

## 1.4 Nature and Classes of Shares

Shares, refer to the units into which the total share capital of a company is divided. Thus, a share is a fractional part of the share capital and forms the basis of ownership interest in a company. The persons who contribute money through shares are called shareholders.

The amount of authorised capital, together with the number of shares in which it is divided, is stated in the Memorandum of Association but the classes of shares in which the company's capital is to be divided, along with their respective rights and obligations, are prescribed by the Articles of Association of the company. As per The Companies Act, a company can issue two types of shares (1) preference shares, and (2) equity shares (also called ordinary shares).

### *1.4.1 Preference Shares*

According to Section 43 of The Companies Act, 2013, a preference share is one, which fulfils the following conditions :

(a) That it carries a preferential right to dividend to be paid either as a fixed amount payable to preference shareholders or an amount calculated by a fixed rate of the nominal value of each share before any dividend is paid to the equity shareholders.

(b) That with respect to capital it carries or will carry, on the winding up of the company, the preferential right to the repayment of capital before anything is paid to equity shareholders.

However, notwithstanding the above two conditions, a holder of the preference share may have a right to participate fully or to a limited extent in the surpluses of the company as specified in the Memorandum or Articles of the company. Thus, the preference shares can be participating and non-participating. Similarly, these shares can be cumulative or non-cumulative, and redeemable or irredeemable.

### *1.4.2 Equity Shares*

According to Section 43 of The Companies Act, 2013, an equity share is a share which is not a preference share. In other words, shares which do not enjoy any preferential right in the payment of dividend or repayment of capital, are termed as equity/ordinary shares. The equity shareholders are entitled to share the distributable profits of the company after satisfying the dividend rights of the preference share holders. The dividend on equity shares is not fixed and it may vary from year to year depending upon the amount of profits available for distribution. The equity share capital may be (i) with voting rights; or (ii) with differential rights as to voting, dividend or otherwise in accordance with such rules and subject to such conditions as may be prescribed.

**Test your Understanding – I**

State which of the following statements are true :

(a) A company is an artificial person.
(b) Shareholders of a company are liable for the acts of the company.
(c) Every member of a company is entitled to take part in its management.
(d) Company's shares are generally transferable.
(e) Share application account is a personal account.
(f) The director of a company must be a shareholder.
(g) Paid up capital can exceed called up capital.
(h) Capital reserves are created from capital profits.
(i) At the time of issue of shares, the maximum rate of securities premium is 10%.
(j) The part of capital which is called up only on winding up is called reserve capital.
(k) The shares originally issued at discount may be re-issued at a premium.

## 1.5 Issue of Shares

A salient characteristic of the capital of a company is that the amount on its shares can be gradually collected in easy instalments spread over a period of time depending upon its growing financial requirement. The first instalment is collected along with application and is thus, known as application money, the second on allotment (termed as allotment money), and the remaining instalment are termed as first call, second call and so on. The word final is suffixed to the last instalment. However, this in no way prevents a company from calling the full amount on shares right at the time of application.

The important steps in the procedure of share issue are :

- *Issue of Prospectus:* The company first issues the prospectus to the public. Prospectus is an invitation to the public that a new company has come into existence and it needs funds for doing business. It contains complete information about the company and the manner in which the money is to be collected from the prospective investors.
- *Receipt of Applications:* When prospectus is issued to the public, prospective investors intending to subscribe the share capital of the

company would make an application along with the application money and deposit the same with a scheduled bank as specified in the prospectus. The company has to get minimum subscription within 120 days from the date of the issue of the prospectus. If the company fails to receive the same within the said period, the company cannot proceed for the allotment of shares and application money should be returned within 130 days of the date of issue of prospectus.

- *Allotment of Shares:* If minimum subscription has been received, the company may proceed for the allotment of shares after fulfilling certain other legal formalities. Letters of allotment are sent to those whom the shares have been alloted, and letters of regret to those to whom no allotment has been made. When allotment is made, it results in a valid contract between the company and the applicants who now became the shareholders of the company.

**Minimum Subscription**

The minimum amount that, in the opinion of directors, must be raised to meet the needs of business operations of the company relating to:

- the price of any property purchased, or to be purchased, which has to be met wholly or partly out of the proceeds of issue;
- preliminary expenses payable by the company and any commission payable in connection with the issue of shares;
- the repayment of any money borrowed by the company for the above two matters;
- working capital; and
- any other expenditure required for the usual conduct of business operations.

It is to be noted that 'minimum subscription' of capital cannot be less than 90% of the issued amount according to SEBI (Disclosure and Investor Protection) Guidelines, 2000 [6.3.8.1 and 6.3.8.2]. If this condition is not satisfied, the company shall forthwith refund the entire subscription amount received. If a delay occurs beyond 8 days from the date of closure of subscription list, the company shall be liable to pay the amount with interest at the rate of 15% [Section 73(2)].

Shares of a company are issued either at par or at a premium. Shares are to be issued at *par* when their issue price is exactly equal to their nominal value according to the terms and conditions of issue. When the shares of a company are issued more than its nominal value (face value), the excess amount is called premium.

Irrespective of the fact that shares are issued at par or at a premium, the share capital of a company as stated earlier, may be collected in instalments payable at different stages.

## 1.6 Accounting Treatment

*On application :* The amount of money paid with various instalment represents the contribution to share capital and should ultimately be credited to share capital. However, for the sake of convenience, initially individual accounts are opened for each instalment. All money received along with application is deposited with a scheduled bank in a separate account opened for the purpose. The journal entry is as follows:

Bank A/c Dr.
    To Share Application A/c
(Amount received on application for — shares @ Rs. ______ per share)

*On allotment :* When minimum subscription has been received and certain legal formalities on the allotment of shares have been duly compiled with, the directors of the company proceed to make the allotment of shares.

The allotment of shares implies a contract between the company and the applicants who now become the allottees and assume the status of shareholders or members.

**Allotment of Shares**
**(Implications from accounting point of view)**

- It is customary to ask for some amount called "Allotment Money" from the allottees on the shares allotted to them as soon as the allotment is made.
- With the acceptance to the offer made by the applicants, the amount of application money received has to be transferred to share capital account as it has formally become the part of the same.
- The money received on rejected applications should either be fully returned to the applicant within period prescribed by law/SEBI.
- In case lesser number of shares have to be allotted, than those applied for the excess application money must be adjusted towards the amount due on allotment from the allottees.
- The effect of the later two steps is to close the share application account which is only a temporary account for share capital transactions.

The journal entries with regard to allotment of shares are as follows:

1. *For Transfer of Application Money*

   Share Application A/c Dr.

   To Share Capital A/c

   (Application money on _____ Shares allotted/ transferred to Share Capital)

2. *For Money Refunded on Rejected Application*

   Share Application A/c Dr.

   To Bank A/c

   (Application money returned on rejected application for ___shares)

3. *For Amount Due on Allotment*

   Share Allotment A/c Dr.

   To Share Capital A/c

4. *For Adjustment of Excess Application Money*

   Share Application A/c Dr.

   To Share Allotment A/c

   (Application Money on __Shares @ Rs__per shares adjusted to the amount due on allotment).

5. *For Receipt of Allotment Money*

   Bank A/c Dr.

   To Share Allotment A/c

   (Allotment money received on ___Shares @ Rs. — per share Combined Account)

Note:- The journal entries (2) and (4) can also be combined as follows:

Share Application A/c

To Share Allotment A/c

To Bank A/c

(Excess application money adjusted to share allotment and balance refunded)

Sometimes *a combined account* for share application and share allotment called 'Share Application and Allotment Account' is opened in the books of a company. The combined account is based on the reasoning that allotment without application is impossible while application without allotment is meaningless. These two stages of share capital are closely inter-related. When a combined account is maintained, journal entries are recorded in the following manner:

1. *For Receipt of Application and Allotment*

   Bank A/c Dr.

   To Share Application and Allotment A/c

   (Money received on applications for shares @ Rs. _____ per share).

2. *For Transfer of Application Money and Allotment Amount Due*

   Share Application and Allotment A/c Dr.

   To Share Capital A/c

   (Transfer of application money to Share Capital Account for amount due or allotment of — Share @ Rs. _____ per share)

3. *For Money Refunded on Rejected Applications*

   Share Application and Allotment A/c Dr.

   To Bank A/c

   (Application money returned on rejected application for ___ shares)

4. *On Receipt of Allotment Amount*

   Bank A/c Dr.

   To Share Application and Allotment A/c

   (Balance of Allotment Money Received)

*On Calls :* Calls play a vital role in making shares fully paid-up and for realising the full amount of shares from the shareholders. In the event of shares not being fully called up till the completion of allotment, the directors have the authority to ask for the remaining amount on shares as and when they decide about the same. It is also possible that the timing of the payment of calls by the shareholders is determined at the time of share issue itself and given in the prospectus.

Two points are important regarding the calls on shares. First, the amount on any call should not exceed 25% of the face value of shares. Second, there must be an interval of at least one month between the making of two calls unless otherwise provided by the articles of association of the company.

When a call is made and the amount of the same is received, the journal entries are as given below:

1. *For Call Amount Due*

   Share Call A/c Dr.

   To Share Capital A/c

   (Call money due on ___Shares @ Rs. ____ per share)

2. *For Receipt of Call Amount*

   Bank A/c Dr.

   To Share Call A/c

   (Call money received)

The word/words First, Second, or Third must be added between the words "Share" and 'Call' in the Share Call account depending upon the identity of the call made. For example, in case of first call it will be termed as 'Share First Call Account', in case of second call it will be 'Share Second Call Account' and so on.

Another point to be noted is that the words 'and Final' will also be added to the last call, say, if second call is the last call it will be termed as 'Second and Final Call' and if it is the third call which is the last call, it will be termed as 'Third and Final Call'. It is also possible that the whole balance after allotment may be collected in one call only. In that case the first call itself, shall be termed as the 'First and Final Call'.

The following points should be kept in mind while issuing the share capital for public subscription :

1. The application money should be at least 5% of the face value of the share.
2. Calls are to be made as per the provisions of the articles of association.
3. Where there is no articles of association of its own, the following provisions of Table A will apply:
   (a) A period of one month must elapse between two calls;
   (b) The amount of call should not exceed 25% of the face value of the share;
   (c) A minimum of 14 days' notice is given to the shareholders to pay the amount; and
   (d) Calls must be made on a uniform basis on all shares within the same class.
4. The procedure for accounting for the issue of both equity and preference shares is the same. To differentiate between the two the words 'Equity' and 'Preference' is prefixed to each and every instalment.

## Illustration 1

Mona Earth Mover Limited decided to issue 12,000 shares of Rs.100 each payable at Rs.30 on application, Rs.40 on allotment, Rs.20 on first call and balance on second and final call. Applications were received for 13,000 shares. The directors decided to reject application of 1,000 shares and their application money being refunded in full. The allotment money was duly received on all the shares, and all sums due on calls are received except on 100 shares.

Record the transactions in the books of Mona Earth Movers Limited

### Solution

**Books of Mona Earth Mover Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 3,90,000 | |
| | To Share Application A/c | | | 3,90,000 |
| | (Application money on 13,000 shares @ Rs.30 per share received) | | | |
| | Share Application A/c Dr. | | 3,60,000 | |
| | To Share Capital A/c | | | 3,60,000 |
| | (Application money transferred to share capital) | | | |

| | | | | |
|---|---|---|---|---|
| | Share Application A/c Dr.<br>To Bank A/c<br>(Application money on 1,000 shares returned] | | 30,000 | <br>30,000 |
| | Share Allotment A/c Dr.<br>To Share Capital A/c<br>(Money due on allotment of 12,000 shares @ Rs. 40 per share) | | 4,80,000 | <br>4,80,000 |
| | Bank A/c Dr.<br>To Share Allotment A/c<br>(Money received on 12,000 shares @ Rs. 40 per share on allotment) | | 4,80,000 | <br>4,80,000 |
| | Share First Call A/c Dr.<br>To Share Capital A/c<br>(Money due on 12,000 shares @ Rs. 20 per share on first Call) | | 2,40,000 | <br>2,40,000 |
| | Bank A/c Dr.<br>To Share First Call A/c<br>(First Call money received except for 100 shares) | | 2,38,000 | <br>2,38,000 |
| | Share Second and Final Call A/c Dr.<br>To Share Capital A/c<br>(Money due on 12,000 shares @ Rs. 10 per share on Second and final Call ) | | 1,20,000 | <br>1,20,000 |
| | Bank A/c Dr.<br>To Share Second and Final Call A/c<br>(Second and final call money received except for 100 shares) | | 1,19,000 | <br>1,19,000 |

***Illustration 2***

Eastern Company Limited issued 40,000 shares of Rs. 10 each to the public for the subscription out of its share capital, payable as Rs. 4 on application, Rs. 3 on allotment and the balance on Ist and final call. Applications were received for 40,000 shares. The company made the allotment to the applicants in full. All the amounts due on allotment and first and final call were duly received.

Give the journal entries in the books of the company.

***Solution***

**Books of Eastern Company Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| | Bank A/c Dr.<br>To Share Application A/c<br>(Application money on 40,000 shares @ Rs.4 per share received) | | 1,60,000 | 1,60,000 |
| | Share Application A/c Dr.<br>To Share Capital A/c<br>(Application money transferred to share capital) | | 1,60,000 | 1,60,000 |
| | Share Allotment A/c Dr.<br>To Share Capital A/c<br>(Money due on allotment of 40,000 shares @ Rs. 3 per share) | | 1,20,000 | 1,20,000 |
| | Bank A/c Dr.<br>To Share allotment A/c<br>(Money received on 40,000 shares @ Rs. 3 per share on allotment) | | 1,20,000 | 1,20,000 |
| | Share First and Final Call A/c Dr.<br>To Share Capital A/c<br>(Money due on 40,000 shares @ Rs. 3 per share on First and final call) | | 1,20,000 | 1,20,000 |
| | Bank A/c Dr.<br>To Share First and Final Call A/c<br>(First and final call money received) | | 1,20,000 | 1,20,000 |

**Do it Yourself**

On April 01, 2015, a limited company was incorporated with an authorised capital of Rs. 40,000 divided into shares of Rs. 10 each. It offered to the public for subscription of 3,000 shares payable as follows:

| | |
|---|---|
| On Application | Rs. 3 per share |
| On Allotment | Rs. 2 per share |
| On First Call (One month after allotment) | Rs. 2.50 per share |
| On Second and Final Call | Rs. 2.50 per share |

The shares were fully subscribed for by the public and application money duly received on April 15, 2015. The directors made the allotment on May 1, 2015.

How will you record the share capital transactions in the books of a company if the amounts due has been duly received, and the company maintains the combined account for application and allotment.

### *1.6.1 Calls in Arrears*

It may happen that shareholders do not pay the call amount on due date. When any shareholder fails to pay the amount due on allotment or on any of the calls, such amount is known as 'Calls in Arrears'/'Unpaid Calls'. Calls in Arrears represent the debit balance of all the calls account. Such amount shall appear as 'Note to Accounts (Refer Chapter 3). However, where a company maintains 'Calls in Arrears' Account, it needs to pass the following additional journal entry:

Calls in Arrears A/c Dr.
  To Share First Call Account A/c
  To Share Second and Final Call Account A/c
(Calls in arrears brought into account)

The Articles of Association of a company may empower the directors to charge interest at a stipulated rate on calls in arrears. If the articles are silent in this regard, the rule contained in Table F shall be applicable which states that the interest at a rate not exceeding 10% p.a. shall have to be paid on all unpaid amounts on shares for the period intervening between the day fixed for payment and the time of actual payment thereof.

On receipt of the call amount together with interest, the amount of interest shall be credited to interest account while call money shall be credited to the respective call account or to calls in arrears account. When the shareholder makes the payment of calls in arrears together with interest, the entry will be as follows:

Bank A/c Dr.
  To Calls in Arrears A/c
  To Interest A/c
(Calls in arrears received with interest)

*Note:* If nothing is specified, there is no need to take the interest on calls in arrears account and record the above entry

### *Illustration 3*

Cronic Limited issued 10,000 equity shares of Rs. 10 each payable at Rs. 2.50 on application, Rs. 3 on allotment, Rs. 2 on first call, and the balance of Rs. 2.50 on second and final call. All the shares were fully subscribed and paid except of a shareholder having 100 shares who could not pay for second and final call. Give journal entries to record these transactions.

**Solution:**

**Books of Cronic Limited**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| | Bank A/c | Dr. | | 25,000 | |
| | To Share Application A/c | | | | 25,000 |
| | (Money received on applications for 10,000 shares @ Rs. 2.50 per share) | | | | |
| | Equity Share Application A/c | Dr. | | 25,000 | |
| | To Share Capital A/c | | | | 25,000 |
| | (Transfer of application money on 10,000 shares to share capital) | | | | |
| | Equity Share Allotment A/c | Dr. | | 30,000 | |
| | To Share Capital A/c | | | | 30,000 |
| | (Amount due on the allotment of 10,000 shares @ Rs. 3 per share) | | | | |
| | Bank A/c | Dr. | | 30,000 | |
| | To Share Allotment A/c | | | | 30,000 |
| | (Allotment money received) | | | | |
| | Share First Call A/c | Dr. | | 20,000 | |
| | To Share Capital A/c | | | | 20,000 |
| | (First call money due on 10,000 shares @ Rs. 2 per share) | | | | |
| | Bank A/c | Dr. | | 20,000 | |
| | To Share First Call A/c | | | | 20,000 |
| | (First call money received) | | | | |
| | Share Second and Final Call A/c | Dr. | | 25,000 | |
| | To Share Capital A/c | | | | 25,000 |
| | (Final call money due) | | | | |
| | Bank A/c | Dr. | | 24,750 | |
| | Call in Arrears A/c | Dr. | | 250 | |
| | To Share Second and Final Call A/c | | | | 25,000 |
| | (Final call money received except that of 100 shares) | | | | |

### *1.6.2 Calls in Advance*

Sometimes shareholders pay a part or the whole of the amount of the calls not yet made. The amount so received from the shareholders is known as "Calls in Advance". The amount received in advance is a liability of the company and should be credited to 'Call in Advance Account." The amount received will be adjusted towards the payment of calls as and when they becomes due. Table F of the Companies Act provides for the payment of interest on calls in advance at a rate not exceeding 12% per annum.

The following journal entry is recorded for the amount of calls received in advance.

Bank A/c Dr.
  To Calls in Advance A/c
(Amount received on call in advance)

On the due date of the calls, the amount of 'Calls in Advance' is adjusted by the following entry :

Calls in Advance A/c Dr.
  To Particular Call A/c
(Calls in advance adjusted with the call money due)

The balance in 'Calls in Advance' account is shown as a separate item under the title *Equity and Liabilities* in the company's balance sheet under the head *'current liabilities'*, as sub-head *'others current liabilities'*. It is not added to the amount of paid-up capital.

As 'Calls in Advance' is a liability of the company, it is under obligation, if provided by the Articles, to pay interest on such amount from the date of its receipt up to the date when appropriate call is due for payment. A stipulation is generally made in the Articles regarding the rate at which interest is payable. However, if Articles are silent on this account, Table F is applicable which provides for interest on calls in advance at a rate not exceeding 12% per annum.

The accounting treatment of interest on Calls in Advance is as follows:

1. *For Payment of Interest*
   Interest on Calls in Advance A/c Dr.
     To Bank A/c
   (Interest paid on Calls in Advance)

Or

2. (a) *For Interest due*
   Interest on Calls in Advance A/c Dr.
     To Sundry Shareholder's A/c
   (Interest paid on Calls in Advance)

2. (b) *For Interest Paid*
   Sundry Shareholder's A/c Dr.
     To Bank A/c

***Illustration 4***

Konica Limited registered with an authorised equity capital of Rs. 2,00,000 divided into 2,000 shares of Rs. 100 each, issued for subscription of 1,000 shares payable at Rs. 25 per share on application, Rs. 30 per share on allotment, Rs. 20 per share on first call and the balance as and when required.

Application money on 1,000 shares was duly received and allotment was made to them. The allotment amount was received in full, but when the first call was made, one shareholder failed to pay the amount on 100 shares held by him and another shareholder with 50 shares, paid the entire amount on his shares. The company did not make any other call.

Give the necessary journal entries in the books of the company to record these share capital transactions.

***Solution***

**Books of Konica Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Bank A/c Dr.<br>To Equity Share Application A/c<br>(Money received on application for 1,000 shares @ Rs. 25 per share) | | 25,000 | <br>25,000 |
| | Equity Share Application A/c Dr.<br>To Equity Share Capital A/c<br>(Transfer of application money on 1,000 shares to share capital) | | 25,000 | <br>25,000 |
| | Equity Share Allotment A/c Dr.<br>To Equity Share Capital A/c<br>(Amount due on the allotment of 1,000 shares @ Rs. 30 per share) | | 30,000 | <br>30,000 |
| | Bank A/c Dr.<br>To Equity Share Allotment A/c<br>(Allotment money received) | | 30,000 | <br>30,000 |
| | Equity Share First Call A/c Dr.<br>To Equity Share Capital A/c<br>(First call money due on 1,000 shares @ Rs. 20 per share) | | 20,000 | <br>20,000 |
| | Bank A/c Dr.<br>Calls in Arrears A/c Dr.<br>To Equity Share First Call A/c<br>To Calls in Advance A/c<br>(First call money received on 900 shares, calls in arrears for 100 shares @ Rs.20 per share and calls in advance for 50 shares @ Rs.25 per share.) | | 19,250<br>2,000 | <br><br>20,000<br>1,250 |

In practice the entries for the amount received are recorded in the cash book and not in the journal (See Illustration 5).

***Illustration 5***

Unique Pictures Limited was registered with an authorised capital of Rs. 5,00,000 divided into 20,000, 5% preference shares of Rs. 10 each and 30,000 equity shares of Rs. 10 each. The company issued 10,000 preference and 15,000 equity shares for public subscription. Calls on shares were made as under

| | *Equity Shares (Rs.)* | *Preference Shares (Rs.)* |
|---|---|---|
| Application | 2 | 2 |
| Allotment | 3 | 3 |
| First Call | 2.50 | 2.50 |
| Second and Final Call | 2.50 | 2.50 |

All these shares were fully subscribed. All the dues were received except the second and final call on 100 equity shares and on 200 preference shares. Record these transactions in the journal. You are also required to prepare the cash book and balance sheet.

***Solution***

**Books of Unique Pictures Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Equity Share Application A/c Dr. | | 30,000 | |
| | 5% Preference Share Application A/c Dr. | | 20,000 | |
| | To Equity Share Capital A/c | | | 30,000 |
| | To 5% Preference Share Capital A/c | | | 20,000 |
| | (Transfer of application money) | | | |
| | Equity Share Allotment A/c Dr. | | 45,000 | |
| | 5% Preference Share Allotment A/c Dr. | | 30,000 | |
| | To Equity Share Capital A/c | | | 45,000 |
| | To 5% Preference Share Capital A/c | | | 30,000 |
| | (Amount due on allotment) | | | |
| | Equity Share First Call A/c Dr. | | 37,500 | |
| | 5% Preference Share First Call A/c Dr. | | 25,000 | |
| | To Equity Share Capital A/c | | | 37,500 |
| | To 5% Preference Share Capital A/c | | | 25,000 |
| | (First call money due) | | | |
| | Equity Share Second and Final Call A/c Dr. | | 37,500 | |
| | 5% Preference Share Second and final Call A/cDr. | | 25,000 | |
| | To Equity Share Capital A/c | | | 37,500 |
| | To 5% Preference Share Capital A/c | | | 25,000 |
| | (First call money due) | | | |
| | Call in Arrears A/c Dr. | | 750 | |
| | To Equity Share Second and Final Call A/c | | | 250 |
| | To 5% Preference Share Final Call A/c | | | 500 |
| | (For Calls in Arrears) | | | |

**Cash Book (Bank Column)**

*Dr.* *Cr.*

| *Date* | *Receipts* | *L.F.* | *Amount (Rs.)* | *Date* | *Payments* | *L.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Equity Share Application | | 30,000 | | Balance c/d | | 2,49,250 |
| | 5% Preference Share Application | | 20,000 | | | | |
| | Equity Share Allotment | | 45,000 | | | | |
| | 5% Preference Share Allotment | | 30,000 | | | | |
| | Equity Share First Call | | 37,500 | | | | |
| | 5% Preference Share First Call | | 25,000 | | | | |
| | Equity Share Second and Final Call | | 37,250 | | | | |
| | 5% Preference Share Second and Final Call | | 24,500 | | | | |
| | | | **2,49,250** | | | | **2,49,250** |

**Balance Sheet of unique pictures as at . . . . .**

| Particulars | Note No. | Amount (Rs.) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholders' Funds | | |
| a) Share capital | 1 | 2,49,250 |
| | | **2,49,250** |
| **II. Assets** | | |
| 1. Current assets | | |
| a) Cash and Cash Equivalents | 2 | 2,49,250 |
| | | **2,49,250** |

Notes to Accounts

| | | |
|---|---|---|
| 1. Share Capital | | |
| Authorised Capital | | |
| 30,000 Equity Shares of Rs. 10 each | | 3,00,000 |
| 20,000 5% Preference Shares of Rs. 10 each | | 2,00,000 |
| | | **5,00,000** |
| *Issued Capital* | | |
| 15,000 Equity Shares of Rs. 10 each | | 1,50,000 |
| 10,000 5% Preference Shares of Rs. 10 each | | 1,00,000 |
| | | **2,50,000** |

| | | |
|---|---|---|
| Subscribed Capital | | |
| Subscribed and fully paid-up | | |
| 14,900 Equity Shares of Rs. 10 each | 1,49,000 | |
| 9,800, 5% Preference Shares of Rs. 10 each | 98,000 | |
| | | **2,47,000** |
| Subscribed but not fully paid-up | | |
| 100 Equity Shares of Rs. 10 each | 1,000 | |
| Less: Calls in Arreras | -250 | 750 |
| 200, 5% Preference Shares of Rs. 10 each | 2,000 | |
| Less : Calls in Arrers | -500 | 1,500 |
| | | **2,49,250** |

***Illustration 6***

Rohit & Company issued 30,000 shares of Rs.10 each payable Rs.3 on application, Rs.3 on allotment and Rs.2 on first call after two months. All money due on allotment was received, but when the first call was made a shareholder having 400 shares did not pay the first call and a shareholder of 300 shares paid the money for the second and final call of Rs.2 which had not been made as yet.

Give the necessary journal entries in the books of the company.

***Solution:***

**Books of Rohit & Company**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Bank A/c Dr. | | 90,000 | |
| | To Share Application A/c | | | 90,000 |
| | (Application money received on 30,000 shares @ Rs.3 per share) | | | |
| | Share Application A/c Dr. | | 90,000 | |
| | To Share Capital A/c | | | 90,000 |
| | (Application money transferred to share capital account) | | | |
| | Share Allotment A/c Dr. | | 90,000 | |
| | To Share Capital A/c | | | 90,000 |
| | (Allotment money due on 30,000 shares @ Rs.3 per share) | | | |
| | Bank A/c Dr. | | 90,000 | |
| | To Share Allotment A/c | | | 90,000 |
| | (Allotment money received) | | | |

| | | | | |
|---|---|---|---|---|
| | Share First Call A/c Dr.<br>To Share Capital A/c<br>(First call money due on 30,000 shares @ Rs.2 per share) | | 60,000 | 60,000 |
| | Bank A/c Dr.<br>Call in Arrears A/c Dr.<br>To Share First Call A/c<br>To Calls in Advance A/c<br>(Calls in arrears for 400 shares @Rs.2 per share and calls in advance on 300 shares @Rs.2 per share) | | 59,800<br>800 | 60,000<br>600 |

**Do it Your self**

1. A company issued 20,000 equity shares of Rs.10 each payable Rs.3 on application, Rs.3 on allotment, Rs.2 on first call and Rs.2 on second and the final call. The allotment money was payable on or before May 01, 2015; first call money on or before August Ist, 2015; and the second and final call on or before October Ist, 2015; 'X', whom 1,000 shares were allotted, did not pay the allotment and call money; 'Y', an allottee of 600 shares, did not pay the two calls; and 'Z', whom 400 shares were allotted, did not pay the final call. Pass journal entries and prepare the balance sheet of the company.
2. Alfa Company Ltd. issued 10,000 shares of Rs.10 each for cash payable Rs.3 on application, Rs.2 on allotment and the balance in two equal instalments. The allotment money was payable on or before March 31, 2015; the first call money on or before 30 June, 2015; and the final call money on or before August, 31. 2015. Mr. 'A', to whom 600 shares were allotted, paid the entire remaining face value of shares allotted to him on allotment. Record journal entries in company's books and also exhibit the share capital in the balance sheet on the date.

### *1.6.3 Over Subscription*

There are instances when applications for more shares of a company are received than the number offered to the public for subscription. This usually happens in respect of shares issue of well-managed and financially strong companies and is said to be a case of 'Over Subscription'.

In such a condition, three alternatives are available to the directors to deal with the situation: (1) they can accept some applications in full and totally reject the others; (2) they can make a pro-rata allotment to all; and (3) they can adopt a combination of the above two alternatives which happens to be the most common course adopted in practice.

The problem of over subscription is resolved with the allotment of shares. Therefore, from the accounting point of view, it is better to place the situation of over subscription within the total frame of application and allotment, i.e. receipt of application amount, amount due on allotment and its receipt from the shareholders, and the same has been observed in the pattern of entries.

*First Alternative :* When the directors decide to fully accept some applications and totally reject the others, the application money received on rejected applications is fully refunded. For example, a company invited applications for 20,000 shares and received the applications for 25,000 shares. The directors rejected the applications for 5,000 shares which are in excess of the required number and refunded their application money in full. In this case, the journal entries on application and allotment will be as follows :

The journal entries on application and allotment according to this alternative are as follows:

| | | |
|---|---|---|
| 1 | Bank A/c<br>To Share Application A/c<br>(Money received on application for 25,000 shares @ Rs. _ per share) | Dr. |
| 2 | Share Application A/c<br>To Share Capital A/c<br>To Bank A/c<br>(Transfer of application for money 20,000 for shares allotted and money refunded on applications for 5,000 shares rejected) | Dr. |
| 3 | Share Allotment A/c<br>To Share Capital A/c<br>(Amount due on the allotment of 20,000 shares @ Rs. _ per share) | Dr. |
| 4 | Bank A/c<br>To Share Allotment A/c<br>(Allotment money received) | Dr. |

*Second Alternative :* When the directors opt to make a proportionate allotment to all applicants (called 'pro-rata' allotment), the excess application money received is normally adjusted towards the amount due on allotment. In case, the excess application money received is more than the amount due on allotment of shares, such excess amount may either be refunded or credited to calls in advance.

For example, in the event of applications for 20,000 shares being invited and those received are for 25,000 shares, it is decieded to allot shares in the ratio of 4:5 to all applicants. It is a case of pro-rata allotment and the excess application money received on 5,000 shares would be adjusted towards the amount due on the allotment of 20,000 shares. In this case, the journal entries on application and allotment will be as follows.

| | | | |
|---|---|---|---|
| 1 | Bank A/c<br>To Share Application A/c<br>(Application money received on 25,000 shares @ Rs. _ per Share) | Dr. | |
| 2 | Share Application A/c<br>To Share Capital A/c<br>To Share Allotment A/c<br>(Transfer of application money to share capital and the excess application money on 5,000 shares credited to share allotment account) | Dr. | |
| 3 | Share Allotment A/c<br>To Share Capital A/c<br>(Amount due on allotment of 25,000 share @ Rs. _ per share) | Dr. | |
| 4 | Bank A/c<br>To Share Allotment A/c<br>(Allotment money received after adjusting the amount already received as excess application money) | Dr. | |

*Third Alternative :* When the application for some shares are rejected outrightly; and pro-rata allotment is made to the remaining applicants, the money on rejected applications is refunded and the excess application money received from applicants to whom pro-rata allotment has been made is adjusted towards the amount due on the allotment of shares allotted.

For example, a company invited applications for 10,000 shares and received applications for 15,000 shares. The directors decided to reject the applications for 2,500 shares outright and to make a pro-rata allotment of 10,000 shares to the applicants for the remaining 12,500 shares so that four shares are allotted for every five shares applied. In this case, the money on applications for 2,500 shares rejected would be refunded fully and that on the remaining 2,500 shares (12,500 shares – 10,000 shares) would be adjusted against the allotment amount due on 10,000 shares allotted and credited to share allotment account, the journal entries on application and allotment recorded as follows:

| | | | |
|---|---|---|---|
| 1 | Bank A/c<br>To Share Application A/c<br>(Money received on application for 15,000 shares @ Rs. _ per share) | Dr. | |

| | | | |
|---|---|---|---|
| 2 | Share Application A/c | Dr. | |
| | To Share Capital A/c | | |
| | To Share Allotment A/c | | |
| | To Bank A/c | | |
| | (Transfer of application money to share capital, and the excess application amount of pro-rata allottees credited to share allotment and the amount on rejected applications refunded) | | |
| 3 | Share Allotment A/c | Dr. | |
| | To Share Capital A/c | | |
| | (Amount due on the Allotment of 10,000 shares @ Rs. _ per share) | | |
| 4 | Bank A/c | Dr. | |
| | To Share Allotment A/c | | |
| | (Allotment money received after adjusting the amount already received as excess application money) | | |

***Illustration 7***

Janta Papers Limited invited applications for 1,00,000 equity shares of Rs. 25 each payable as under:

| | |
|---|---|
| On Application | Rs. 5.00 per share |
| On Allotment | Rs. 7.50 per share |
| On First Call (due two months after allotment) | Rs. 7.50 per share |
| On Second and Final Call (due two months after First Call) | Rs. 5.00 per share |

Applications were received for 4,00,000 shares on January 01, 2017 and allotment was made on February 01, 2017.

Record journal entries in the books of the company to record these share capital transactions under each of the following circumstances:

1 The directors decide to allot 1,00,000 shares in full to selected applicants and the applications for the remaining 3,00,000 shares were rejected outright.

2 The directors decide to make a pro-rata allotment of 25 per cent of the shares applied for to every applicant; to apply the balance of application money towards amount due on allotment; and to refund the amount remaining thereafter.

3 The directors totally reject applications for 2,00,000 shares, accept full applications for 80,000 shares and make a pro-rata allotment of the 20,000 shares to remaining applicants and the excess application money is to be adjusted towards allotment and calls to be made.

**Solution**

**Books of Janta Papers Limited**
**Journal**

*First Alternative*

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| 2017 January 01 | Bank A/c Dr. | | 20,00,000 | |
| | To Equity Share Application A/c | | | 20,00,000 |
| | (Money received on applications for 4,00,000 shares @ Rs. 5 per share) | | | |
| February 01 | Equity Share Application A/c Dr. | | 20,00,000 | |
| | To Equity Share Capital A/c | | | 5,00,000 |
| | To Bank A/c | | | 15,00,000 |
| | (Transfer of application money on 1,00,000 shares to share capital and money refunded on rejected applications) | | | |
| February 01 | Equity Share Allotment A/c Dr. | | 7,50,000 | |
| | To Equity Share Capital A/c | | | 7,50,000 |
| | (Amount due on the allotment of 1,00,000 shares @ Rs 7.50 per share) | | | |
| | Bank A/c Dr. | | 7,50,000 | |
| | To Equity Share Allotment A/c | | | 7,50,000 |
| | (Allotment money received) | | | |
| April 01 | Equity Share First Call A/c Dr. | | 7,50,000 | |
| | To Equity Share Capital A/c | | | 7,50,000 |
| | (First call money due on 1,00,000 shares @ Rs. 7.50 per share) | | | |
| April 01 | Bank A/c Dr. | | 7,50,000 | |
| | To Equity Share First Call A/c | | | 7,50,000 |
| | (First call money received) | | | |
| June 01 | Equity Share Second and Final Call A/c Dr. | | 5,00,000 | |
| | To Equity Share Capital A/c | | | 5,00,000 |
| | (Final Call money due on 1,00,000 shares @ Rs. 5 per share) | | | |
| June 01 | Bank A/c Dr. | | 5,00,000 | |
| | To Equity Share Second and Final Call A/c | | | 5,00,000 |
| | (Final call money received) | | | |

*Second Alternative*

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| 2017 January 01 | Bank A/c Dr. | | 20,00,000 | |
| | To Equity Share Application A/c | | | 20,00,000 |
| | (Money received on applications for 4,00,000 shares @ Rs. 5 per share) | | | |
| February 01 | Equity Share Application A/c Dr. | | 20,00,000 | |
| | To Equity Share Capital A/c | | | 5,00,000 |
| | To Equity Share Allotment A/c | | | 7,50,000 |
| | To Bank A/c | | | 7,50,000 |
| | (Transfer of application money on Shares allotted to share capital, excess application amount credited to allotment account and money refunded on rejected applications) | | | |
| February 01 | Equity Share Allotment A/c Dr. | | 7,50,000 | |
| | To Equity Share Capital A/c | | | 7,50,000 |
| | (Amount due on the allotment of Rs. 1,00,000 shares @ Rs 7.50 per share) | | | |

*Note :* The entries regarding the two calls would be the same as given in preceding method.

*Third Alternative*

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| *2017* January 01 | Bank A/c Dr. | | 20,00,000 | |
| | To Equity Share Application A/c | | | 20,00,000 |
| | (Money received on applications for 4,00,000 shares @ Rs. 5 per share) | | | |

| | | | | |
|---|---|---|---|---|
| February 01 | Equity Share Application A/c Dr.<br>To Equity Share Capital A/c<br>To Equity Share Allotment A/c<br>To Calls-in-Advance A/c<br>To Bank A/c<br>(Amount on share application adjusted to share capital, share allotment and calls in advance and the balance refunded including the money on rejected applications) | | 20,00,000 | <br>5,00,000<br>1,50,000<br>2,50,000<br>11,00,000 |
| February 01 | Equity Share Allotment A/c Dr.<br>To Equity Share Capital A/c<br>(Transfer of application money on shares allotted to share capital and amount due on the allotment of 1,00,000 shares @ Rs. 7.50 per share) | | 7,50,000 | <br>7,50,000 |
| | Bank A/c Dr.<br>To Equity Share Allotment A/c<br>(Allotment money received) | | 6,00,000 | <br>6,00,000 |
| April 01 | Equity Share First Call A/c Dr.<br>To Equity Share Capital A/c<br>(First Call money due on 1,00,000 shares @ Rs. 7.50 per share) | | 7,50,000 | <br>7,50,000 |
| April 01 | Bank A/c Dr.<br>Calls in Advance A/c Dr.<br>To Equity Share First Call A/c<br>(Calls-in-advance adjusted against first call and the balance money on call received) | | 6,00,000<br>1,50,000 | <br><br>7,50,000 |
| June 01 | Equity Share Second and Final Call A/c Dr.<br>To Equity Share Capital A/c<br>(Final Call money due on 1,00,000 shares @ Rs. 5 per share) | | 5,00,000 | <br>5,00,000 |
| June 01 | Bank A/c Dr.<br>Calls in Advance A/c Dr.<br>To Equity Share Second and Final Call A/c<br>(Calls-in-advance adjusted against final call and the balance money on call received) | | 4,00,000<br>1,00,000 | <br><br>5,00,000 |

*Note:* The balance of excess application money as a result of pro-rata distribution in journal entry 3 above is large enough to meet the demands on allotted shares in respect of the allotment and the two call money, as well as to leave an amount to be refunded along with that on the rejected applications.



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*Working Notes:*

| | (Rs.) | (Rs.) |
|---|---|---|
| Excess Application Money | | 15,00,000 |
| *Less* Transfers : | | |
| Share Allotment — | | |
| 20,000 shares @ Rs. 7.50 | 1,50,000 | |
| Share Calls — | | |
| 20,000 shares @ Rs. 12.50 | 2,50,000 | 4,00,000[1] |
| Amount to be refunded (including that on the rejected applications) | | 11,00,000 |

### 1.6.4 Under Subscription

Under subscription is a situation where number of shares applied for is less than the number for which applications have been invited for subscription. For example, a comapny offered 2 lakh shares for subscription to the public but the applications were received for 1,90,000 shares, only. In such a situation, the allotment will be confirmed to 1,90,000 shares and entries shall be made accordingly. However, as stated earlier, it must be ensured that the company has received the minimum subscriptions and the company will have to refund the entire subscription amount received.

### 1.6.5 Issue of Shares at a Premium

It is quite common for the shares of financially strong and well-managed companies to be issued at a premium, i.e. at an amount more than the nominal or par value of shares. Thus, when a share of the nominal value of Rs. 100 is issued at Rs. 105, it is said to have been issued at a premium of 5 per cent.

When the issue of shares is at a premium, the amount of premium may technically be called at any stage of the issue of shares. However, premium is generally called with the amount due on allotment, sometimes with the application money and rarely with the call money. The premium amount is credited to a separate account called 'Securities Premium Account' and is shown under the title *'Equity and Liabilities'* of the company's balance sheet under the head *'Reserves and Surpluses'*. It can be used only for the following five purposes:

(a) to issue fully paid bonus shares to the extent not exceeding unissued share capital of the company;
(b) to write-off preliminary expenses of the company;
(c) to write-off the expenses of, or commission paid, or discount allowed on any securities of the company; and
(d) to pay premium on the redemption of preference shares or debentures of the company.

(e) Purchase of its own shares (i.e., buy back of shares).

The journal entries for shares issued at a premium are as follows:

1. For *Premium Amount called with Application money*

(a) Bank A/c Dr.

To Share Application A/c

(Money received on application for —
shares @ Rs. — per share including premium)

(b) Share Application A/c Dr.

To Share Capital A/c

To Securities Premium Reserve A/c

(Transfer of application money to share
capital and securities premium account)

2. *Premium Amount called with Allotment Money*

(a) Share Allotment A/c Dr.

To Share Capital A/c

To Securities Premium Reserve A/c

(Amount due on allotment of shares @
Rs — per share including premium)

(b) Bank A/c Dr.

To Share Allotment A/c

(Allotment money received including premium)

3. *Premium Amount called with Call Money*

(a) Share Application A/c

To Share Capital Reserve A/c

To Securities Premium A/c

(Amount due on I$^{st}$/2$^{nd}$ call @Rs— per share including premium)

(b) Bank A/c Dr.

To Share Call A/c

(Call money received including premium)

***Illustration 8***

Jupiter Company Limited issued 35,000 equity shares of Rs. 10 each at a premium of Rs.2 payable as follows:

| | |
|---|---|
| On Application | Rs. 3 |
| On Allotment | Rs. 5 (including premium) |
| Balance on First and Final Call | |

The issue was fully subscribed. All the money was duly received.
Record journal entries in the books of the Company.

***Solution:***

**Books of Jupiter Company Limited**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| | Bank A/c | Dr. | | 1,05,000 | |
| | To Equity Share Application A/c | | | | 1,05,000 |
| | (Money received on applications for 35,000 shares @ Rs. 3 per share) | | | | |
| | Equity Share Application A/c | Dr. | | 1,05,000 | |
| | To Equity Share Capital A/c | | | | 1,05,000 |
| | (Transfer of application money on allotment to share capital) | | | | |
| | Equity Share Allotment A/c | Dr. | | 1,75,000 | |
| | To Equity Share Capital A/c | | | | 1,05,000 |
| | To Securities Premium Reserve A/c | | | | 70,000 |
| | (Amount due on allotment of 35,000 shares @ Rs. 5 per share including premium) | | | | |
| | Bank A/c | Dr. | | 1,75,000 | |
| | To Equity Share Allotment A/c | | | | 1,75,000 |
| | (Money received including premium ) | | | | |
| | Equity Share First and Final Call A/c | Dr. | | 1,40,000 | |
| | To Equity Share Capital A/c | | | | 1,40,000 |
| | (Amount due on First and Final Call of Rs. 4 per share on 35,000 shares) | | | | |
| | Bank A/c | Dr. | | 1,40,000 | |
| | To Equity Share First and Final Call A/c | | | | 1,40,000 |
| | (Money received on First and Final Call ) | | | | |

### *1.6.6 Issue of Shares at a Discount*

There are instances when the shares of a company are issued at a discount, i.e. at an amount less than the nominal or par value of shares, the difference between the nominal value and issue price representing discount on the issue of shares. For example, when a share of the nominal value of Rs. 100 is issued at Rs. 98, it is said to have been issued at a discount of two per cent.

As a general rule, a company cannot ordinarily issue shares at a discount. It can do so only in cases such as 'reissue of forfeited shares' (to be discussed later) and issue of sweat equity shares.

### *1.6.7 Issue of Shares for Consideration other than Cash*

There are instances where a company enters into an arrangement with the vendors from whom it has purchased assets, whereby the latter agrees to accept, the payment in the form of fully paid shares of the company issued to them. Normally, no such cash is received for issue of shares. These shares can also be issued either at par, at premium or at discount, and the number of shares to be issued will depend upon the price at which the shares are issued and the amount payable to the vendor. The number of shares to be issued to the vendor will be calculated as follows:

$$\text{Number of shares to be issued} = \frac{\text{Amount Payable}}{\text{Issue Price}}$$

For example, Rahul Limited purchased building from Handa Limited for Rs.5,40,000 and the payment is to be made by the issue of shares of Rs.100 each. The number of shares to be issued shall be worked out as follows in different situations:

(a) *When shares are issued at par, i.e. at Rs.100*

$$\text{Number of shares to be issued} = \frac{\text{Amount Payable}}{\text{Issue Price}}$$

$$= \frac{\text{Rs. } 5{,}40{,}000}{\text{Rs. } 100}$$

$$= 5{,}400 \text{ shares}$$

(b) *When shares issued at premium of 20%, i.e. at Rs. 120 (100 + 20)*

$$\text{Number of shares to be issued} = \frac{\text{Amount Payable}}{\text{Issue Price}}$$

$$= \frac{\text{Rs. } 5{,}40{,}000}{\text{Rs. } 120}$$

$$= 4{,}500 \text{ shares}$$

The journal entries recorded for the shares issued for consideration other than cash in above situations will be as follows :

**Books of Rahul Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Building A/c Dr. | | 5,40,000 | |
| | To Handa Limited | | | 5,40,000 |
| | (Building purchased) | | | |

| | | | |
|---|---|---|---|
| (a) | *When shares are issued at par*<br>Handa Limited Dr.<br>To Share Capital A/c<br>(5,400 Shares issued at par) | 5,40,000 | <br><br>5,40,000 |
| (b) | *When shares are issued at premium of 20%*<br>Handa Limited Dr.<br>To Share Capital A/c<br>To Securities Premium Reserve A/c<br>(4,500 shares issued at Rs.120 per share) | <br>5,40,000 | <br><br>4,50,000<br>90,000 |

***Illustration 9***

Jindal and Company purchased a machine from High Life Machine Limited for Rs.3,80,000. As per purchase agreement, Rs. 20,000 were paid in cash and balance by issue of shares of Rs.100 each. What will be the entries passed if the shares are issued :

(a) at par
(b) at 20% premium

***Solution:***

Number of shares will be calculated as follows:

(a) When shares issued at par

$$\frac{\text{Rs. } 3,60,000}{\text{Rs.}100} = 3,600 \text{ shares}$$

(b) When shares issued at premium

$$\frac{\text{Rs. } 3,60,000}{\text{Rs.}120} = 3,000 \text{ shares}$$

**Books of Jindal and Company**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Machine A/c Dr.<br>To Bank A/c<br>To High Life Machine Limited<br>(Machine purchased and Rs. 20,000 paid in cash and the balance paid by issue of share) | | 3,80,000 | <br>20,000<br>3,60,000 |
| (a) | *When shares are issued at par*<br>High Life Machine Limited Dr.<br>To Share Capital A/c<br>(3,600 Shares are Rs.100 each) | | <br>3,60,000 | <br><br>3,60,000 |

| | | | | |
|---|---|---|---|---|
| (b) | *When shares are issued at premium*<br>High Life Machine Limited Dr.<br>To Share Capital A/c<br>To Securities Premium Reserve A/c<br>(3,000 shares issued at Rs.120 per share) | | 3,60,000 | <br><br>3,00,000<br>60,000 |

**Test your Understanding – II**

Choose the correct answer.

(a) Equity shareholders are:
- (i) creditors
- (ii) owners
- (iii) customers of the company
- (iv) none of the above

(b) Nominal share capital is :
- (i) that part of the authorised capital which is issued by the company.
- (ii) the amount of capital which is actually applied for by the prospective shareholders.
- (iii) the maximum amount of share capital which a company is authorised to issue.
- (iv) the amount actually paid by the shareholders.

(c) Interest on calls in arrears is charged according to "Table F" at :
- (i) 10%
- (ii) 6%
- (iii) 8%
- (iv) 11%

(d) Money received in advance from shareholders before it is actually called-up by the directors is :
- (i) debited to calls in advance account
- (ii) credited to calls in advance account
- (iii) debited to calls account
- (iv) none of the above

(e) Shares can be forfeited :
- (i) for non-payment of call money
- (ii) for failure to attend meetings
- (iii) for failure to repay the loan to the bank
- (iv) for which shares are pledged as a security

(f) The Profit on reissue of forfeited shares is transferred to :
- (i) general reserve
- (ii) capital redemption reserve
- (iii) capital reserve
- (iv) reveneue reserve

(g) Balance of share forfeiture account is shown in the balance sheet under the item :
- (i) current liabilities and provisions
- (ii) reserves and surpluses
- (iii) share capital
- (iv) unsecured loans

## 1.7 Forfeiture of Shares

It may happen that some shareholders fail to pay one or more instalments, viz. allotment money and/or call money. In such circumstances, the company can forfeit their shares, i.e. cancel their allotment and treat the amount already received thereon as forfeited to the company within the framework of the provisions in its articles. These provisions are usually based on Table F which authorise the directors to forefeit the shares for non-payment of calls made. For this purpose, they have to strictly follow the procedure laid down in this regard. Following is the accounting treatment of shares issued at par, premium or at a discount. When shares are forefeited all entries relating to the shares forfeited except those relating to premium, already recorded in the accounting records must be reversed. Accordingly, share capital account is debited with the amount called-up in respect of shares are forfeited and crediting the respective unpaid calls accounts's or calls in arrears account with the amount already received. Thus, the journal entry will be as follows:

(a) *Forfeiture of Shares issued at Par:*

Share Capital A/c..........(Called up amount) Dr.
  To Share Forfeiture A/c...........(Paid up amount)
  To Share Allotment A/c
  To Share Calls A/c (individually)
(..... shares forfeited for non-payment of allotment money and calls made)

It may be noted here that when the shares are forfeited, all entries relating to the forfeited shares must be reversed except the entry relating to share premium received, if any. Accordingly, the share capital is debited to the extent to called-up capital and credited to (i) respective unpaid calls account i.e., calls in arrears and (ii) share forfeiture account with the amount already received on shares.

The balance of shares forfeited account is shown as an addition to the total paid-up capital of the company under the head *'Share Capital'* under title *'Equity and Liabilities'* of the Balance Sheet till the forfeited shares are reissued.

### *Illustration 10*

Honda Limited issued 10,000 equity shares of 100 each payable as follows: Rs. 20 on application, Rs. 30 on allotment, Rs. 20 on first call and Rs. 30 on second and final calls 10,000 shares were applied for and allotted. All money due was received with the exception of both calls on 300 shares held by Supriya. These shares were forfeited. Give necessary journal entries.

***Solution***

**Books of Honda Limited**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|---|
| | Bank A/c | Dr. | | 2,00,000 | |
| | To Share Application A/c | | | | 2,00,000 |
| | (Application money on 10,000 shares @Rs.20 per share received) | | | | |
| | Share Application A/c | Dr. | | 2,00,000 | |
| | To Share Capital A/c | | | | 2,00,000 |
| | (Application money transferred to share capital) | | | | |
| | Share Allotment A/c | Dr. | | 3,00,000 | |
| | To Share Capital A/c | | | | 3,00,000 |
| | (Money due on allotment of 10,000 shares @Rs. 30 per share) | | | | |
| | Bank A/c | Dr. | | 3,00,000 | |
| | To Share Allotment A/c | | | | 3,00,000 |
| | (Allotment Money received on 10,000 shares @ Rs. 30 per share on ) | | | | |
| | Share First Call A/c | Dr. | | 2,00,000 | |
| | To Share Capital A/c | | | | 2,00,000 |
| | (Money due on 10,000 shares @ Rs. 20 per share on Ist Call) | | | | |
| | Bank A/c | Dr. | | 1,94,000 | |
| | To Share First Call A/c | | | | 1,94,000 |
| | (First call money received except for 300 shares) | | | | |
| | Share Second and Final Call A/c | Dr. | | 3,00,000 | |
| | To Share Capital A/c | | | | 3,00,000 |
| | (Money due on 10,000 shares @ Rs. 30 per share on Second and Final Call) | | | | |
| | Bank A/c | Dr. | | 2,91,000 | |
| | To Share Second and Final Call A/c | | | | 2,91,000 |
| | (Second and Final Call money received except for 300 shares) | | | | |
| | Share Capital A/c | Dr. | | 30,000 | |
| | To Share First Call A/c | | | | 6,000 |
| | To Share Second and Final Call A/c | | | | 9,000 |
| | To Share Forfeiture A/c | | | | 15,000 |
| | (300 shares Forfeited) | | | | |

*Forfeiture of Shares issued at a Premium:* If shares were initially issued at a premium and the premium amount has been fully realised, but some of the shares are forfeited due to non-payment of call money, the accounting treatment for forfeiture shall be on the same pattern as in the case of shares issued at par. The important point to be noted in this context is that the securities premium account is not to be debited at the time of forfeiture if the premium has been received in respect of the forefeited shares and the amount of forfeiture shall be excluding premium amount.

In case, however, if the premium amount has not been received, either wholly or partially, in respect of the shares forfeited, the Securities Premium Reserve Account will also be debited with the amount of premium not received along with the Share Capital Account at the time forfeiture. This will usually be the case when even the amount due on allotment has not been received. Thus, the journal entry to record the forfeiture of shares issued at a premium on which premium has not been fully received, will be :

Share Capital A/c Dr.
Securities Premium Reserve A/c Dr.
To Share Forfeiture A/c
To Share Allotment A/c
and/or
To Share Calls A/c (individually)
(..... shares forefeited for non-payment of allotment money and calls made)

*Note:* If Calls in Arrears Account is maintained, Calls in Arrears Account is credited and not the Share Allotment and/or Share Call/Calls Accounts.

### *Illustration 11*

Sahil, a share holder, failed to pay the money for second and final call of Rs. 20 on 1,000 shares issued to him at Rs. 120 (face value of Rs. 100 per share). His shares were forfeited after the second and final call. Give the necessary journal entry for forefeiture of the shares.

**Solution:**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Share Capital A/c Dr. | | 1,00,000 | |
| | To Share second and Final Call A/c | | | 20,000 |
| | To Share Forfeiture A/c | | | 80,000 |
| | (Forfeiture of 1,000 shares for non-payment of the second and final call) | | | |

### *Illustration 12*

Sunena, a shareholder holding 500 shares of Rs. 10 each, did not pay the allotment money of Rs. 4 per share (including a premium of Rs. 2) and the first and final call of Rs. 3. Her shares were forfeited after the first and final call. Give journal entry for forefeiture of the shares.

***Solution:***

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| | Share Capital Reserve A/c Dr. | | 5 ,000 | |
| | Securities Premium A/c Dr. | | 1,000 | |
| | To Share Allotment A/c | | | 2,000 |
| | To Share first and final Call A/c | | | 1,500 |
| | To Share Forfeiture A/c | | | 2,500 |
| | (Forfeiture of 500 shares for non-payment of first and final call) | | | |

***Illustration 13***

Ashok Limited issued 3,00,000 equity shares of Rs. 10 each at a premium of Rs. 2 per share, payable as Rs. 3 on application, Rs. 5 on allotment (including premium) and the balance in two calls of equal amount.

Applications were received for 4,00,000 shares and pro-rata allotment was made to all the applicants. The excess application money was adjusted towards allotment. Mukesh who was allotted 800 shares failed to pay both the calls and his shares were forfeited after the second call. Record necessary journal entries in the books of Ashok Limited and also show the balance sheet:

***Solution:***

**Books of Ashok Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 12,00,000 | |
| | To Equity Share Application A/c | | | 12,00,000 |
| | (Application money received on 4,00,000 shares) | | | |
| | Equity Share Application A/c Dr. | | 12,00,000 | |
| | To Equity Share Capital A/c | | | 9,00,000 |
| | To Equity Share Allotment A/c | | | 3,00,000 |
| | (Application money on 3,00,000 shares transferred to share capital account and the excess amount adjusted to share allotment account) | | | |

| | | | | |
|---|---|---|---|---|
| | Equity Share Allotment A/c Dr.<br>To Equity Share Capital A/c<br>To Securities Premium Reserve A/c<br>(Allotment money due on 3,00,000 shares) | | 15,00,000 | <br>9,00,000<br>6,00,000 |
| | Bank A/c Dr.<br>To Equity Share Allotment Reserve A/c<br>(Allotment amount received after adjusting excess money received with application) | | 12,00,000 | <br>12,00,000 |
| | Equity Share First Call A/c Dr.<br>To Equity Share Capital A/c<br>(First Call amount due on 3,00,000 shares) | | 6,00,000 | <br>6,00,000 |
| | Bank A/c Dr.<br>Calls in Arrears A/c Dr.<br>To Equity Share First Call A/c<br>(First Call amount received on 2,99,200 shares) | | 5,98,400<br>1,600 | <br><br>6,00,000 |
| | Equity Share Second and Final Call A/c Dr.<br>To Equity Share Capital A/c<br>(Second Call amount due on 3,00,000 Shares) | | 6,00,000 | <br>6,00,000 |
| | Bank A/c Dr.<br>Calls in Arrears A/c Dr.<br>To Equity Share Second and Final Call A/c<br>(Amount on 2,99,200 shares received) | | 5,98,400<br>1,600 | <br><br>6,00,000 |
| | Equity Share Capital A/c Dr.<br>To Share Forfeiture A/c<br>To Call in Arrears A/c<br>(Forfeiture of 800 shares) | | 8,000 | <br>4,800<br>3,200 |

**Balance Sheet of Ashok Limited as on ..............**

| *Particulars* | *Note No.* | *Amount (Rs.)* |
|---|---|---|
| **I EQUITY AND LIABILITIES** | | |
| 1. Shareholders' Funds | | |
| (a) Share Capital | 1 | 29,96,800 |
| (b) Reserves and Surplus | 2 | 6,00,000 |
| | | 35,96,800 |
| **II ASSETS** | | |
| 1. Current Assets | | |
| Cash and Cash Equivalents | 3 | 35,96,800 |
| | | 35,96,800 |

*Notes to Accounts*

| | | Rs. |
|---|---|---|
| 1. *Share Capital* | | |
| Authorised Capital | | |
| ... Equity shares of Rs. 10 each | | |
| *Issued Capital* | | |
| 3,00,000 Equity shares of Rs. 10 each | | **30,00,000** |
| *Subscribed Capital* | | |
| *Subscribed and Fully Paid-up* | | |
| 2,99,200 Equity shares of Rs. 10 each | | 29,92,000 |
| Add: Share forfeiture accounts | | 4,800 |
| | | 29,96,800 |
| 2. *Reserves and Surplus* | | |
| Securities Premium Reserve | | **6,00,000** |
| 3. *Cash and Cash Equivalents* | | |
| Cash at bank | | **35,96,800** |

### Illustration 14

High Light India Ltd. invited applications for 30,000 Shares of Rs. 100 each at a premium of Rs. 20 per share payable as follows:

| | |
|---|---|
| On Application | Rs. 40 (including Rs.10 premium) |
| On Allotment | Rs. 30 (including Rs.10 premium) |
| On First Call | Rs. 30 |
| On Second and Final Call | Rs. 20 |

Applications were received for 40,000 shares and pro-rata allotment was made on the application for 35,000 share. Excess application money was utilised towards allotment.

Rohan to whom 600 shares were allotted failed to pay the allotment money and his shares were forfeited immediately after allotment.

Aman who applied for 1,050 shares failed to pay first call and his share were forfeited immediatelyafter first Call.

Second and final call was made. All the money due on second call have been received.

Of the shares forfeited, 1,000 share were reissued as fully paid-up for Rs. 80 per share, which included the whole of Aman's shares.

Record necessary journal entries in the books of High Light India Ltd.

***Solution:***

| *Date* | *Particulars* | | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|---|
| | Bank A/c | Dr. | | 16,00,000 | |
| | To Share Application A/c | | | | 16,00,000 |
| | (Application money received on 40,000 shares) | | | | |
| | Share Application A/c | Dr. | | 14,00,000 | |
| | To Share Capital A/c | | | | 9,00,000 |
| | To Securities Premium Reserve A/c | | | | 3,00,000 |
| | To Share Allotment A/c | | | | 2,00,000 |
| | (Application money transferred to share capital account, securities premium account and the excess money transfered to share allotment account) | | | | |
| | Share Application A/c | Dr. | | 2,00,000 | |
| | To Bank A/c | | | | 2,00,000 |
| | (Amount returned on 500 shares) | | | | |
| | Share Allotment A/c | Dr. | | 9,00,000 | |
| | To Share Capital A/c | | | | 6,00,000 |
| | To Securities Premium Reserve A/c | | | | 3,00,000 |
| | (Money due on allotment) | | | | |
| | Bank A/c | Dr. | | 6,86,000 | |
| | To Share Allotment A/c | | | | 6,86,000 |
| | (Amount received in allotment) | | | | |
| | Share Capital A/c | Dr. | | 30,000 | |
| | Securities Premium Reserve A/c | Dr. | | 6,000 | |
| | To Share Allotment A/c | | | | 14,000 |
| | To Share Forfeiture A/c | | | | 22,000 |
| | (Forfeiture of 600 shares of Rohan for non-payment of allotment money) | | | | |
| | Share First Call A/c | Dr. | | 8,82,000 | |
| | To Share Capital A/c | | | | 8,82,000 |
| | (First Call money due on 29,400 shares) | | | | |
| | Bank A/c | Dr. | | 8,55,000 | |
| | To Share First Call A/c | | | | 8,55,000 |
| | (First call money received on 28,500 shares) | | | | |

| | | | | |
|---|---|---|---|---|
| | Share Capital A/c Dr. | | 72,000 | |
| | To Share First Call A/c | | | 27,000 |
| | To Share Forfeiture A/c | | | 45,000 |
| | (Forfeiture of 900 Aman Shares) | | | |
| | Share Second and Final Call A/c Dr. | | 5,70,000 | |
| | To Share Capital A/c | | | 5,70,000 |
| | (Second and Final Call money due on 28,500 shares) | | | |
| | Bank A/c Dr. | | 5,70,000 | |
| | To Share Second and Final Call A/c | | | 5,70,000 |
| | (Due money received) | | | |
| | Bank A/c Dr. | | 80,000 | |
| | Share Forfeiture A/c Dr. | | 20,000 | |
| | To Share Capital A/c | | | 1,00,000 |
| | (Reissue of 1,000 forfeited shares) | | | |
| | Share Forfeiture A/c Dr. | | 18,333 | |
| | To Capital Reserve | | | 18,333 |
| | (Profit on 1,000 reissued shares transferred to capital reverve) | | | |

*Working Notes:*

**(I) Excess amount received on Rohan's application**

Rohan has been alloted = 600 Shares

He must have applied for $\frac{\text{Rs. } 35{,}000}{\text{Rs. } 30{,}000} \times 600$ 700 Shares

| | | Rs. |
|---|---|---|
| Amount received from Rohan | = 700 × Rs. 40 | 28,000 |
| Amount Adjusted on Application | = 600 × Rs. 40 | (24,000) |
| Amount Adjusted on Allotment | | **4,000** |
| Money due on Allotment | = 600 × Rs. 30 | 18,000 |
| Money Adjusted | | (4,000) |
| Balance due on Allotment | | **14,000** |

**(II) Amount recieved on allotment**

| | |
|---|---|
| Total Amount due on Allotment = Rs. 30,000 × Rs. 30 | = 9,00,000 |
| Amount received on Application | (2,00,000) |
| | 7,00,000 |
| Amount not received on Rohan's Share | (14,000) |
| | **6,86,000** |

**(III) Money received on First Call**

| | | |
|---|---|---|
| First Call money due on 29,400 shares | 29,400 × Rs. 30 = | 8,82,000 |
| Application money not received on 900 Shares | 900 × Rs. 30 | (27,000) |
| | | **8,55,000** |

**(IV) 1000 shares have been reissued including 900 shares of Aman and Balance 100 shares of Rohan**

| | |
|---|---|
| Profit on 100 shares $= \dfrac{22,000}{600} \times 100$ = | 3,667 |
| Profit in 900 shares = | 45,000 |
| | 48,667 |
| *Less:* Loss on reissue of 1,000 shares | (20,000) |
| | **28,667** |

**(V) Balance in Share Forfeiture Account of 500 shares**

$$\text{Rs. } \frac{22,000}{600} \times 500 = \text{Rs. } 18,333$$

**Do it Yourself**

1. A company forfeited 100 equity shares of Rs.10 each issued at a premium of 20% for non-payment of final call of Rs.5 including the premium. Show the journal entry for forefeiture of shares.
2. A company forfeited 800 equity shares of Rs.10 each issued at a discount of 10% for non-payment of first and final calls of Rs.2 each. Calculate the amount forfeited by the company and pass the journal entry for forefeiture of the shares.

***Illustration 15***

X Ltd. issued for public subscription 40,000 equity shares of Rs. 10 each at premium of Rs. 2 per share payable as under :

| | |
|---|---|
| On application | Rs. 4 per share |
| On Allotment | Rs. 5 per share (including premium) |
| On Call | Rs. 3 per share |

Applications were received for 60,000 shares. Allotment was made pro-rata to the applicants for 48,000 shares, the remaining applications being rejected. Money overpaid on application was applied towards sums due on allotment.

Shri Chitnis, to whom 1,600 shares were allotted, failed to pay the allotment money and Shri Jagdale, to whom 2,000 shares were allotted, failed to pay the call money. These shares were subsequently forfeited.

Record journal entries in the books of the company to record the above transactions.

***Solution:***

**Books of X Ltd.**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Bank A/c Dr. | | 2,40,000 | |
| | To Equity Share Application A/c | | | 2,40,000 |
| | (Money received on applications for 60,000 shares @ Rs. 4 per share) | | | |
| | Equity Share Application A/c Dr. | | 2,40,000 | |
| | To Equity Share Capital A/c | | | 1,60,000 |
| | To Equity Share Allotment A/c | | | 32,000 |
| | To Bank a/c | | | 48,000 |
| | (Application amount transferred to share capital, excess application money under pro-rata distribution credited to share allotment and money refunded on rejected application) | | | |
| | Equity Share Allotment A/c Dr. | | 2,00,000 | |
| | To Equity Share Capital A/c | | | 1,20,000 |
| | To Securities Premium Reserve A/c | | | 80,000 |
| | (Amount due on allotment of 40,000 shares @ Rs. 5 per share including premium) | | | |

| | | | | |
|---|---|---|---|---|
| | Bank A/c Dr.<br>Calls-in-Arrears A/c Dr.<br>To Equity Share Allotment A/c<br>(Money received consequent upon allotment) | | 1,61,280<br>6,720 | <br><br>1,68,000 |
| | Equity Share Call A/c Dr.<br>To Equity Share Capital A/c<br>(First call money due on 40,000 shares @ Rs. 3 per share) | | 1,20,000 | <br>1,20,000 |
| | Bank A/c Dr.<br>Calls-in-Arrears A/c Dr.<br>To Equity Share Call A/c<br>(Money received on first call) | | 1,09,200<br>10,800 | <br><br>1,20,000 |
| | Equity Share Capital A/c Dr.<br>Securities Premium Reserve A/c Dr.<br>To Share Forfeiture A/c<br>To Call-in-Arrears A/c<br>(Entry for forfeiture of 3,600 shares) | | 36,000<br>3,200 | <br><br>21,680<br>17,520 |

*Working Notes :*

**I. Amount received on allotment** **Rs.**

(a) Amount due on allotment 2,00,000
40,000 shares × Rs. 5 per share

(b) Amount actually due on allotment 2,00,000
Amount due on allotment
*Less* Excess Application amount applied for allotment 32,000

Amount actually due 1,68,000

(c) Allotment amount due from Chitnis
Allotment money due on Chitnis's share
1,600 shares × Rs. 5 per share 8,000
*Less* excess application money paid
Due to pro-rata distribution –
(1,920 shares – 1,600 shares) 320 × 4 1,280

Allotment amount due from Chitnis 6,720

According to the ratio of pro-rata distribution (40,000 shares : 48,000 shares), for 1,600 shares to be allotted, Chitnis must have applied for 1,920 shares (1,600 shares × 6/5).

(d) Allotment money received
(Amount actually due on Allotment) 1,68,000
*Less* Amount unpaid by Chitnis (6,720)

Amount received 1,61,280

**II. Balance on Shares Forfeited Account**

| | |
|---|---|
| Amount paid by Chitnis : | |
| 1,920 Shares applied for × Rs. 4 per share | 7,680 |
| Amount paid by Jagdale : | |
| 2,000 Shares × (Rs. 4 + Rs. 3) Rs.7 per share | 14,000 |
| Total balance | 21,680 |

*Note :* Premium amount on Jagdale's shares will not be taken into account as it has been received in full by the company.

### *1.7.1 Re-issue of Forfeited Shares*

The directors can either cancel or re-issue the forefeited shares. In most cases, they reissue such shares which may be at par, at premium or at a discount. Forfeited shares may be reissued as fully paid at a par, premium, discount. In this context, it may be noted that the amount of discount allowed cannot exceed the amount that had been received on forfeited shares at the time of initial issue, and that the discount allowed on reissue of forfeited shares should be debited to the 'Forfeited Share Account'. The balance, if any, left in the Share-Forfeited Account relating to reissued Shares, should be treated as capital profit and transferred to Capital Reserve Account. For example, when a company forfeits 200 shares of Rs. 10 each on which Rs. 600 had been received, it can allow a maximum discount of Rs. 600 on their reissue. Assuming that the company reissues these shares for Rs. 1,800 as fully paid, the necessary journal entry will be:

| | | | |
|---|---|---|---|
| Bank A/c | Dr. | 1,800 | |
| Share Forfeiture A/c | Dr. | 200 | |
| To Share Capital A/c | | | 2,000 |
| (Reissue of 200 forfeited shares at Rs. 9 per share as fully paid) | | | |

This shall leave a balance of Rs. 400 in share forfeited account which should be transferred to Capital Reserve Account by recording the following journal entry:

| | | | |
|---|---|---|---|
| Share Forfeiture A/c | Dr. | 400 | |
| To Capital Reserve | | | 400 |
| (Profit on reissue of forfeited shares transferred) | | | |

Another important point to be noted in this context is that the capital profit arises only in respect of the forefited share reissued, and not on all forefeited shares. Hence, when a part of the forfeited shares are reissued, the whole balance of share forfeiture account cannot be transferred to the capital reserve. In such a situation, it is only the proportionate amount of balance that relates to the forefeited shares reissued which should be transferred to capital reserve, ensuring that the remaining balance in share forefeiture account is proportionate to the amount forefeited on shares not yet reissued.

### Illustration 16

The director of Poly Plastic Limited resolved that 200 equity shares of Rs.100 each be forfeited for non-payment of the second and final call of Rs.30 per share. Out of these, 150 shares were re-issued at Rs.60 per share to Mohit.

Show the necessary journal entries .

**Solution:**

**Books of Poly Plastic Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| | Share Capital A/c Dr. | | 20,000 | |
| | To Shares Forfeiture A/c | | | 14,000 |
| | To Share Second and Final Call A/c | | | 6,000 |
| | (200 shares forfeited for non-payment of final call at Rs.30 per share) | | | |
| | Bank A/c Dr. | | 9,000 | |
| | Shares Forfeiture A/c Dr. | | 6,000 | |
| | To Share Capital A/c | | | 15,000 |
| | (Reissue of 150 shares of Rs.100 each, issued as fully paid for Rs.60 each) | | | |
| | Shares Forfeiture A/c Dr. | | 4,500 | |
| | To Capital Reserve A/c | | | 4,500 |
| | (Profit on reissue of 150 forfeited shares transferred to capital reserve) | | | |

*Working Notes :*

| | | Rs. | |
|---|---|---|---|
| Total amount forfeited on 200 shares | = | 14,000 | (200 shares × Rs. 70) |
| Amount forfeited on 150 shares | = | 10,500 | (150 shares × Rs. 70) |
| Amount of loss on reissue of 150 shares | = | 6,000 | (150 shares × Rs. 40) |
| Amount of profit on reissued shares transferred to capital reserve | = | 4,500 | (Rs. 10,500 – Rs. 6,000) |
| Amount forfeited on 50 shares | = | 3,500 | (50 shares × Rs. 70) |
| Balance left in share forfeited account (equal to amount forfeited on 50 shares) | = | 3,500 | (Rs.14,000 – Rs. 6,000 – Rs. 4,500) |

***Illustration 17***

On January 1, 2015, the Director of X Ltd. issued for public subscription 50,000 equity shares of Rs. 10 each at Rs. 12 per share payable as to Rs. 5 on application (including premium), Rs. 4 on allotment and the balance on call on May 01, 2015.

The lists were closed on February 10, 2015 by which date applications for 70,000 shares were received. Of the cash received Rs. 40,000 was returned and Rs.60,000 was applied to the amount due on allotment, the balance of which was paid on February 16, 2015.

All the shareholders paid the call due on May 01, 2015 with the exception of an allottee of 500 shares.

These shares were forfeited on September 29, 2015 and reissued us fully paid at Rs. 8 per share on November 01, 2015.

The company, as a matter of policy, does not maintain a calls-in-arrears account.

Give journal entries to record these share capital transactions in the books of X. Ltd.

***Solution:***

**Book of X. Ltd.**
**Journal**

| Date 2015 | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| Feb.10 | Bank A/c Dr. | | 3,50,000 | |
| | To Equity Share Application A/c | | | 3,50,000 |
| | (Amount received on application for 70,000 shares @ Rs. 5 per share Including Premium) | | | |
| Feb.16 | Equity Share Application A/c Dr. | | 2,50,000 | |
| | To Equity Share Capital A/c | | | 1,50,000 |
| | To Securities Premium Reserve A/c | | | 1,00,000 |
| | (Transfer of application money on 50,000 shares to share capital and premium accounts consequent upon allotment) | | | |
| Feb.16 | Equity Share Application A/c Dr. | | 1,00,000 | |
| | To Bank A/c | | | 40,000 |
| | To Equity Share Allotment A/c | | | 60,000 |
| | (Excess application money credited to share allotment and money refunded on rejected application) | | | |

| | | | | |
|---|---|---|---|---|
| Feb.16 | Equity Share Allotment A/c Dr.<br>To Equity Share Capital A/c<br>(Amount due on allotment of 50,000) Shares @ Rs. 4 per share) | | 2,00,000 | <br>2,00,000 |
| Feb.16 | Bank A/c Dr.<br>To Equity Share Allotment A/c<br>(Money received on allotment) | | 1,40,000 | <br>1,40,000 |
| May 1 | Equity Share First and Final Call A/c Dr.<br>To Equity Share Capital A/c<br>(First call money due) | | 1,50,000 | <br>1,50,000 |
| May 1 | Bank A/c Dr.<br>To Equity Share First and Final Call A/c<br>(Money received on first call) | | 1,48,500 | <br>1,48,500 |
| Sept. 29 | Equity Share Capital A/c Dr.<br>To Shares Forfeiture A/c<br>To Equity Share First and Final Call A/c<br>(Forfieted of 500 shares for non-payment of call) | | 5,000 | <br>3,500<br>1,500 |
| Nov. 1 | Bank A/c Dr.<br>Shares Forfeiture A/c Dr.<br>To Equity Share Capital A/c<br>(Reissue of 500 forfeited shares as fully paid at Rs. 8 per share) | | 4,000<br>1,000 | <br><br>5,000 |
| Nov. 1 | Shares Forfeiture A/c Dr.<br>To Capital Reserve<br>(Profit on reissue of Forfeited Shares Accounts transferred to capital reserve) | | 2,500 | <br>2,500 |

***Illustration 18***

O Limited issued a prospectus offering 2,00,000 equity shares of Rs. 10 each, at a premium of Rs. 2 per share, payable as follows:

| | |
|---|---|
| On Application | Rs. 2.50 per share |
| On Allotment | Rs. 4.50 per share (including premium) |
| On First Call (three months from allotment) | Rs. 2.50 per share |
| On Second Call (three months after first call) | Rs. 2.50 per share |

Subscriptions were received for 3,17,000 shares on April 23, 2017 and the allotment made on April 30, was as under:

| | | Shares Allotted |
|---|---|---|
| (i) | Allotment in full (two applicants paid in full on allotment in respect of 4,000 shares each) | 38,000 |
| (ii) | Allotment of two shares for every three shares applied for | 1,60,000 |
| (iii) | Allotment of one share for every four shares applied for | 2,000 |

Cash amounting to Rs. 77,500 (being application money received with applications on 31,000 shares upon which no allotments were made) was returned to applicants on May 6, 2017.

The amounts called from the allottees were received on the due dates with the exception of the final call on 100 shares. These shares were forfeited on November 15, 2017 and reissued to Aman on November 16 for payment of Rs. 9 per share.

Record journal entries other than those relating to cash, in the books of O Limited, and also show how to transaction would appear in the balance sheet assuming that the company paid interest due from it on October 31, 2017.

***Solution:***

**Books of O Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs.) | Credit Amount (Rs.) |
|---|---|---|---|---|
| 2017 April 30 | Share Application A/c Dr. | | 7,92,000 | |
| | To Equity Share Capital A/c | | | 5,00,000 |
| | To Bank | | | 77,500 |
| | To Equity Share Allotment A/c | | | 2,09,000 |
| | To Calls in Advance | | | 6,000 |
| | (Transfer of Application Money to share capital after allotment and excess application money on 86,000 shares due to pro-rata allotment credited to share allotment and calls in advance) | | | |
| April 30 | Equity Share Allotment A/c Dr. | | 9,00,000 | |
| | To Equity Share Capital A/c | | | 5,00,000 |
| | To Securities Premium Reserve A/c | | | 4,00,000 |
| | (Allotment amount due on 2,000,000 shares @ Rs. 4.50 per share including premium) | | | |

| | | | | | |
|---|---|---|---|---|---|
| July 31 | Equity Share First Call A/c<br>To Equity Share Capital A/c<br>(First call money due on 2,00,000 shares @ Rs. 2.50 per share) | Dr. | | 5,00,000 | 5,00,000 |
| Oct. 31 | Equity Share Second and Final Call A/c<br>To Equity Share Capital A/c<br>(Second call money due on 2,00,000 shares @ Rs. 2.50 per share) | Dr. | | 5,00,000 | 5,00,000 |
| Oct. 31 | Calls in Advance A/c<br>Calls in Arrears A/c<br>To Equity Share Second and Final Call A/c<br>(Calls in advance on 8,000 shares adjusted against second call money due) | Dr.<br>Dr. | | 21,000<br>250 | 21,250 |
| Nov. 15 | Equity Share Capital A/c<br>To Calls in Arrears A/c<br>To Share Forfeiture A/c<br>(Forfeiture of 100 shares for the non-payment of call money) | Dr. | | 1,000 | 250<br>750 |
| Nov. 16 | Share Forfeiture A/c<br>To Equity Share Capital A/c<br>(Amount due from A for the reissue of 100 shares as fully paid at Rs. 9 per share) | Dr. | | 100 | 100 |
| Nov. 16 | Share Forfeiture A/c<br>To Capital Reserve<br>(Profit on reissue of forfeited Shares transferred to Capital reserve) | Dr. | | 650 | 650 |

**Cash Book**

*Dr.* *Cr.*

| *Receipts* | *Amount (Rs.)* | *Payments* | *Amount (Rs.)* |
|---|---|---|---|
| Equity Share Application | 7,92,500 | Equity Shares Application | 77,500 |
| Equity Share Allotment | 6,91,000 | Balance c/d | 24,00,650 |
| Calls in Advance | 40,000 | | |
| Equity Share First Call | 4,75,000 | | |
| Equity Share Second and Final Call | 4,78,750 | | |
| Equity Share Capital | 900 | | |
| | **24,78,150** | | **24,78,150** |

* *Date column omitted.*

*Working Notes :*

1. Excess Application Money

| *Categories of Allotment* | *No. of Shares Applied* | *No. of Share Alloted* | *Ratio of Allotment* |
|---|---|---|---|
| i | 38,000 | 38,000 | 100% |
| ii | 2,40,000 | 1,60,000 | 2/3 |
| iii | 8,000 | 2,000 | 1/4 |
| | **2,86,000** | **2,00,000** | |

*Therefore,* refund of application money = (3,17,000 – 2,86,000) × Rs. 2.50

= Rs. 77,500

Application money received (2,86,000 shares @ Rs. 2.50) = Rs. 7,15,000

Application money due : (2,00,000 shares @ Rs. 2.50) = Rs. 5,00,000

Excess application money Rs. 2,15,000

2. Amount of Calls in Advance

As two allotees, each holding 4,000 shares, paid the full amount on allotment, amount of calls-in-advance is thus :
8,000 shares × (Rs. 2.50 + Rs. 2.50) = Rs. 40,000

**Buy-back of Shares :** When a company purchase its own shares, it is called 'Buy-back of Shares'. Section 68 of The Companies Act, 2013 provides that the company can buy their own shares from either of the following sources :

(a) Existing equity shareholders on a proportionate basis
(b) Open Market
(c) Odd-lot shareholders
(d) Employees of the company

The company can buy back its own shares either from the free reserves, securities premium or from the proceeds of any shares or other specified securities. In case shares are bought back out of free reserves, the company must transfer a sum equal to the nominal value of shares bought back to 'Capital Redemption Reserve Account'.

The following procedures have been laid down for buy back of shares :

(a) The Articles of the Association must authorise the company for the buy back of shares.
(b) A special resolution must be passed in the companies' Annual General Body meeting.
(c) The amount of buy back of shares in any financial year should not exceed 25% of the paid-up capital and free reserves.
(d) The debt-equity ratio should not be more than a ratio of 2:1 after the buy back.
(e) All the shares of buy back should be fully paid-up.

(f) The buy-back of the shares should be completed within 12 months from the date of passing the special resolution.

(g) The company should file a solvency declaration with the Registrar and SEBI which must be signed by at least two directors of the company.

### *Illustration 19*

Garima Limited issued a prospectus inviting applications for 3,000 shares of Rs. 100 each at a premium of Rs.20 payable as follows:

| | |
|---|---|
| On Application | Rs.20 per share |
| On Allotment | Rs.50 per share (Including premium) |
| On First call | Rs.20 per share |
| On Second call | Rs.30 per share |

Applications were received for 4,000 shares and allotments made on pro-rata basis to the applicants of 3,600 shares, the remaining applications being rejected, money received on application was adjusted on account of sums due on allotment.

Renuka to whom 360 shares were allotted, failed to pay allotment money and calls money, and her shares were forfeited.

Kanika, the applicant of 200 shares failed to pay the two calls, her shares were also forfeited. All these shares were sold to Naman as fully paid for Rs.80 per share. Show the journal entries in the books of the company.

***Solution:***

**Books of Garima Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Bank A/c Dr. | | 80,000 | |
| | To Share Application A/c | | | 80,000 |
| | (Application money received on 4,000 shares @ Rs. 20 per share) | | | |
| | Share Application A/c Dr. | | 80,000 | |
| | To Share Capital A/c | | | 60,000 |
| | To Share Allotment A/c | | | 12,000 |
| | To Bank A/c | | | 8,000 |
| | (Transfer of application money on 3,000 shares to Share Capital Account, on 600 shares to Allotment Account, and on of 400 shares refunded) | | | |

| | | | | |
|---|---|---|---|---|
| | Share Allotment A/c Dr.<br>To Share Capital A/c<br>To Securities Premium Reserve A/c<br>(Money due on allotment @ Rs. 50 per share on 3,000 shares including Rs.20 on account of share premium) | | 1,50,000 | <br>90,000<br>60,000 |
| | Bank A/c Dr.<br>To Share Allotment A/c<br>(Money received on share allotment) | | 1,21,440 | <br>1,21,440 |
| | Share First Call A/c Dr.<br>To Share Capital A/c<br>(Money due on call on 3,000 shares @ Rs.20 per share) | | 60,000 | <br>60,000 |
| | Bank A/c Dr.<br>To Share First Call A/c<br>(First call money received on 2,440 shares) | | 48,800 | <br>48,800 |
| | Share Second and Final Call A/c Dr.<br>To Share Capital A/c<br>(Money due on call on 3,000 shares @ Rs.30 per share) | | 90,000 | <br>90,000 |
| | Bank A/c Dr.<br>To Share Second and Final Call A/c<br>(Second and Final Call money received on 2,440 shares) | | 73,200 | <br>73,200 |
| | Share Capital A/c Dr.<br>Securities Premium Reserve A/c<br>To Share Allotment A/c<br>To Share First Call A/c<br>To Share Second and Final A/c<br>To Share Forfeiture A/c<br>(Forfeiture of 560 shares) | | 56,000<br>7,200 | <br><br>16,560<br>11,200<br>16,800<br>18,640 |
| | Bank A/c Dr.<br>Shares Forfeiture A/c Dr.<br>To Share Capital A/c<br>(Reissue of 560 forfeited shares) | | 44,800<br>11,200 | <br><br>56,000 |
| | Shares Forfeiture A/c Dr.<br>To Capital Reserve<br>(Profit on reissue of 560 forfeited shares transferred to Capital reserve) | | 7,440 | <br>7,440 |

*Working Notes :*

Amount received on allotment has been calculated as follows:

| | | (Rs.) |
|---|---|---|
| | Total money due on allotment (including premium) | 1,50,000 |
| *Less :* | Application money received on 600 shares adjusted towards allotment money | (12,000) |
| | Net amount due on allotment on 3,000 shares | 1,38,000 |
| *Less :* | Allotment money due on 360 shares alloted to Renuka, not received $\frac{360}{3,000} \times 1,38,000$ | (16,560) |
| | Net amount received on 2,640 shares | 1,21,440 |

Since the allotment money which includes securities premium of Rs. 20 per share has not been received on 360 shares held by Renuka (now forfeited) has been debited to Securities premium account as per rules.

Amount forefeited has been worked out as follows :

| | |
|---|---|
| Application money received from Renuka: $\left(360 \times \frac{3,600}{3,000}\right)$ = 432 × Rs. 20 = | Rs. 8,640 |
| Application and Allotment money received from Kanika on 200 shares | Rs. 10,000 |
| Total amount received on forefeited shares | Rs. 18,640 |

**Do it Yourself**

Excel Company Limited made an issue of 1,00,000 Equity Shares of Rs.10 each, payable as follows :

| | |
|---|---|
| On Application | Rs.2.50 per share |
| On Allotment | Rs.2.50 per share |
| On First and Final Call | Rs.5.00 per share |

X, the holder of 400 shares did not pay the call money and his shares were forfeited. 200 of the forfeited shares were reissued as fully paid at Rs.8 per share. Draft necessary journal entries and prepare Share Capital and Share Forfeiture accounts in the books of the company.

**Test Your Understanding – III**

(a) If a Share of Rs. 10 on which Rs. 8 is called-up and Rs. 6 is paid as forfeited. State with what amount the Share Capital account will be debited.

(b) If a Share of Rs. 10 on which Rs. 6 has been paid is forfeited, at what minimum price it can be reissued.

(c) Ahluwalia Ltd. issued 1,000 equity shares of Rs. 100 each as fully paid-up in consideration of the purchase of plant and machinery worth Rs. 1,00,000. What entry will be recorded in company's journal.

***Illustration 20***

Sunrise Company Limited offered for public subscription 10,000 shares of Rs.10 each at Rs. 11 per share. Money was payable as follows:

Rs. 3 on application

Rs. 4 on allotment (including premium)

Rs. 4 on first and final call.

Applications were received for 12,000 shares and the directors made *pro-rata* allotment.

Mr. Ahmad, an applicant for 120 shares, could not pay the allotment and call money, and Mr. Basu, a holder of 200 shares, failed to pay the call. All these shares were forfeited.

Out of the forfeited shares, 150 shares (the whole of Mr. Ahmad's shares being included) were issued at Rs. 8 per share. Record journal entries for the above transactions and prepare the share forfeiture account.

***Solution:***

**Books of Sunrise Company Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Bank A/c Dr. | | 36,000 | |
| | To Share Application A/c | | | 36,000 |
| | (Application money received on 12,000 shares @ Rs. 3 per share) | | | |
| | Share Application A/c Dr. | | 36,000 | |
| | To Share Capital A/c | | | 30,000 |
| | To Share Allotment A/c | | | 6,000 |
| | (Transfer of application money to share capital account on 10,000 shares and the balance to allotment account) | | | |
| | Share Allotment A/c Dr. | | 40,000 | |
| | To Share Capital A/c | | | 30,000 |
| | To Securities Premium Reserve A/c | | | 10,000 |
| | (Money due on allotment @ Rs. 4 per share on 10,000 shares including Rs. 1 on account of premium) | | | |
| | Bank A/c Dr. | | 33,660 | |
| | To Share Allotment A/c | | | 33,660 |
| | (Money received on share allotment: *See note 1)* | | | |

| | | | | | |
|---|---|---|---|---|---|
| | Share first and Final Call A/c | Dr. | | 40,000 | |
| | Share Capital A/c | | | | 40,000 |
| | (Money due on call on 10,000 shares @ Rs. 4 per share) | | | | |
| | Bank A/c | Dr. | | 38,800 | |
| | To Share first and Final Call A/c | | | | 38,800 |
| | (Call money received on 9,700 shares) | | | | |
| | Share Capital A/c | Dr. | | 3,000 | |
| | Securities Premium Reserve A/c | | | 100 | |
| | To Share Allotment A/c | | | | 340 |
| | To Share first and Final Call A/c | | | | 1,200 |
| | To Share Forfeiture A/c | | | | 1,560 |
| | (Forfeiture of 300 shares) | | | | |
| | Bank A/c | Dr. | | 1,200 | |
| | Shares Forfeiture A/c | Dr. | | 300 | |
| | To Share Capital A/c | | | | 1,500 |
| | (Reissue of 150 forfeited shares) | | | | |
| | Shares Forfeiture A/c | Dr. | | 360 | |
| | To Capital Reserve | | | | 360 |
| | (Profit on reissue of 150 forfeited shares transferred) | | | | |

**Share Forfeiture Account**

Dr. Cr.

| *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs.)* |
|---|---|---|---|---|---|---|---|
| | Share Capital | | 300 | | Sundries | | 1,560 |
| | Capital Reserve | | 360 | | | | |
| | Balance c/d | | 900 | | | | |
| | | | 1,560 | | | | 1,560 |

*Working Notes :*

1. Amount received on allotment has been calculated as follows:

| | | *(Rs.)* |
|---|---|---|
| | Total money due on 10,000 shares @ Rs. 4 per share | 40,000 |
| *Less:* | Application Money Received on 2,000 shares adjusted against allotment money | (6,000) |
| | Net amount due on allotment | 34,000 |
| *Less:* | Amount due from an applicant for 120 shares who was allotted only 100 shares $\frac{100}{10{,}000} \times 34{,}000$ | (340) |
| | Amount received on allotment | 33,660 |

2. Securities Premium Account has been debited only with Rs. 100 relating to 100 shares allotted Mr. Ahmad's shares from whom the allotment money (including premium) has not been received.

3. Shares Forfeiture Account represents the money received on forfeited shares excluding Securites premium. This has been worked out as follows:

| | (Rs.) |
|---|---|
| Mr. Ahmad has paid application money @ Rs. 3 per share on 120 shares | 360 |
| Mr. Basu has paid @ Rs. 6 per share on 200 shares in (application and allotment money excluding premium) | 1,200 |
| Total amount received | 1,560 |

| | (Rs.) |
|---|---|
| 4. Amount received from Mr. Ahmad on 100 shares forfeited which have been reissued | 360 |
| Amount received from *Mr. Basu* on 50 shares forfeited which have been reissued $\frac{50}{200} \times$ Rs. 1,200 | 300 |
| Total amount received on 150 shares which have been forfeited and later reissued | 660 |
| *Less:* Discount on reissue of forfeited shares (150 × Rs. 2) | 300 |
| Amount of Capital Profit transferred to capital reserve | 360 |

### *Illustration 21*

Devam Limited issued a prospectus inviting application for 30,000 equity shares of Rs.10 each at a premium of Rs. 4 per share payable as follows:

| | |
|---|---|
| With Application (including premium Rs.1) | Rs. 3 |
| On Allotment (including premium Rs.1) | Rs. 4 |
| On First call (including premium Rs.1) | Rs. 4 |
| On Second and Final call | Balance |

Applications were received for 45,000 shares. 20% of the applications received were rejected and their application money was refunded. Remaining applicants were allotted shares on pro-rata basis.

Mr. Sudhir, who has applied for 600 shares, failed to pay the allotment money and his shares were forfeited immediately after that.

Ms. Muskan, to whom 750 shares were allotted failed to pay the first call and hence her shares were forfeited.

The forfeited shares of Mr. Sudhir were re-issued to Lakshya for Rs. 8 per share as fully paid up.

Final call was made due on remaining applicants and was received except on 1,000 shares of Amit. These shares were forfeited.

Of the shares forfeited, 1,500 shares were re-issued to Devika for Rs. 12 per share as fully paid up, the whole of Lakshya's share being included. Record journal entries in the books of the company.

***Solution:***

**Books of Devam Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs.)* | *Credit Amount (Rs.)* |
|---|---|---|---|---|
| | Bank A/c Dr.<br>To Equity Share Application A/c<br>(Application money received on 45,000 shares) | | 1,35,000 | <br>1,35,000 |
| | Equity Share Application A/c Dr.<br>To Equity Share Capital A/c<br>To Securities Premium Reserve<br>To Equity Share Allotment A/c<br>To Bank A/c<br>(Application money on 30,000 shares transferred to share capital A/c and securities premium reserve account, on 9,000 shares refunded and the excess amount adjusted to share allotment account) | | 1,35,000 | <br>60,000<br>30,000<br>18,000<br>27,000 |
| | Equity Share Allotment A/c Dr.<br>To Equity Share Capital A/c<br>To Securities Premium Reserve<br>(Allotment amount due on 30,000 Shares @ Rs. 4 per share including premium) | | 1,20,000 | <br>90,000<br>30,000 |
| | Bank A/c Dr.<br>To Equity Share Allotment A/c<br>(Allotment amount received after adjusting excess money received on application except shares of Sudhir) | | 1,00,300 | <br>1,00,300 |
| | Equity Share Capital A/c Dr.<br>Securities Premium Reserve A/c Dr.<br>To Equity Share Allotment A/c<br>To Share Forfeiture A/c<br>(Forfeiture of 500 shares of Sudhir) | | 2,500<br>500 | <br><br>1,700<br>1,300 |
| | Equity Share First Call A/c Dr.<br>To Equity Share Capital A/c<br>To Securities Premium Reserve<br>(First Call amount due on 29,500 shares) | | 1,18,000 | <br>88,500<br>29,500 |
| | Bank A/c Dr.<br>To Equity Share First Call A/c<br>(First call amount received on 28,750 shares) | | 1,15,000 | <br><br>1,15,000 |

| | | | | |
|---|---|---|---|---|
| | Equity Share Capital A/c Dr. | | 6,000 | |
| | Securities Premium Reserve A/c | | 750 | |
| | To Equity Share First Call A/c | | | 3,000 |
| | To Share Forfeiture A/c | | | 3,750 |
| | (Forfeiture of 750 shares of Muskan) | | | |
| | Bank A/c Dr. | | 4,000 | |
| | Share Forfeiture A/c Dr. | | 1,000 | |
| | To Equity Share Capital A/c | | | 5,000 |
| | (Re-issue of 500 forfeited shares of Sudhir) | | | |
| | Share Forfeiture A/c Dr. | | 300 | |
| | To Capital Reserve | | | 300 |
| | (Profit on 500 re-issued shares transferred to Capital reserve) | | | |
| | Equity Share Second and Final Dr. | | 86,250 | |
| | To Equity Share Capital A/c | | | 57,500 |
| | To Securities Premium Reserve A/c | | | 28,750 |
| | (Second and Final Call money due on 28,750 shares) | | | |
| | Bank A/c Dr. | | 83,250 | |
| | To Equity Share Second and Final Call A/c | | | 83,250 |
| | (Second and final call amount received on 27,750 shares) | | | |
| | Equity Share Capital A/c Dr. | | 10,000 | |
| | Securities Premium Reserve Dr. | | 1,000 | |
| | To Equity Share Second and Final Call A/c | | | 3,000 |
| | To Share Forfeiture A/c | | | 8,000 |
| | (Forfeiture of 1,000 shares of Amit) | | | |
| | Bank A/c Dr. | | 18,000 | |
| | To Equity Share Capital A/c | | | |
| | To Securities Premium Reserve A/c | | | 15,000 |
| | (Re-issue of 1,500 forfeited shares, including 1,000 shares of Lakshya and 500 shares of Muskan) | | | 3,000 |
| | Share Forfeiture A/c Dr. | | 10,500 | |
| | To Capital Reserve | | | |
| | (Profit on 1,500 re-issued shares transferred to Capital Reserve) | | | 10,500 |

*Working Notes:*

1. Amount received on allotment (Rs.)

a. Amount due on allotment

| | |
|---|---|
| 30,000 shares × Rs. 4 per share | 1,20,000 |

b. Amount actually due on allotment

| | |
|---|---|
| Amount due on allotment | 1,20,000 |
| *Less:* Excess Application amount applied for allotment | 18,000 |
| Amount actually due. | 1,02,000 |

c. Allotment money due from Sudhir

Shares Applied by Sudhir = 600

Shares Allotted to Sudhir = $\frac{30,000}{36,000} \times 600 = 500$

| | |
|---|---|
| Allotment money due from Sudhir | |
| 500 shares × Rs. 4 per share | 2,000 |
| Less – Excess application money paid | |
| (600 shares – 500 shares) × Rs. 3 | 300 |
| Allotment money due from Sudhir | 1,700 |

d.

| | |
|---|---|
| Amount actually due on Allotment | 1,02,000 |
| Less Amount Unpaid by Sudhir | 1,700 |
| Amount received on allotment | 1,00,300 |

2. 1,500 shares have been re-issued including 1,000 shares of Amit and balance 500 shares of Muskan.

| | |
|---|---|
| Profit on 1,000 shares of Amit | 8,000 |
| Profit on 500 shares of Muskan = $\frac{3,750}{750} \times 500 =$ | 2,500 |
| | 10,500 |

3. Balance in Share Forfeiture Account of 250 shares of Muskan = $\frac{3,750}{750} \times 250 = 1,250$

**Do it Yourself**

**Journalise the following :**

(a) The directors of a company forfeited 200 equity shares of Rs.10 each on which Rs. 800 had been paid. The shares were reissued upon payment of Rs.1,500.

(b) A holds 100 shares of Rs.10 each on which he has paid Re.1 per share on application. B holds 200 shares of Rs.10 each on which he has paid Re.1 on application Rs.2 on allotment. C holds 300 shares of Rs.10 each who has paid Re.1 on applications, Rs.2 on allotment and Rs.3 on first call. They all failed to pay their arrears and second call of Rs.4 per share as well. All the shares of A, B and C were forfeited and subsequently reissued at Rs.11 per share as fully Paid-up.

### Termes Used in the Chapter

1. Joint Stock Company
2. Share Capital
3. Authorised Capital
4. Issued Capital
5. Unissued Capital
6. Subscribed Capital
7. Subscribed and fully paid-up
8. Subscribed but not fully paid up
9. Paid-up Capital
10. Reserve Capital
11. Shares
12. Preference Shares
13. Non-redeemable Preference Shares
14. Equity Shares
15. Issue of Shares for Consideration Other than Cash
16. Premium on Shares
17. Application Money
18. Minimum Subscription
19. Calls on Shares
20. Calls in Arrears
21. Calls in Advance
22. Over subscription
23. Under subscription
24. Forfeiture of Shares
25. Reissue of forfeited shares
26. Buy-back of Shares

### Summary

*Company:* An organisation consisting of individuals called 'shareholders' by virtue of their holding the shares of a company, who can act as legal person as regards its business through board of directors.

*Share:* Fractional part of the capital, and forms the basis of ownership in a company. Shares are generally of two types, viz. equity shares and preference shares, according to the provisions of the Companies Act, 2013. Preference shares again are of different types based on varying shades of rights attached to them.

Share Capital of a company is collected by issuing shares to either a select group of persons through the route of private placements and/or offered to the public for subscription. Thus, the issue of shares is basic to the capital of a company. Shares are issued either for cash or for consideration other than cash, the former being more common. Shares are said to be issued for consideration other than cash when a company purchases business, or some asset/assets, and the vendors have agreed to receive payment in the form of fully paid shares of a company.

*Stages of Share Issue:* The issue of shares for cash is required to be made in strict conformity with the procedure laid down by law for the same. When shares are issued for cash, the amount on them can be collected at one or more of the following stages:

(i) Application for shares

(ii) Allotment of shares

(iii) Call/Calls on shares.

*Calls in Arrears:* Sometimes, the full amount called on allotment and/or call (calls) is not received from the allottees/shareholders. The amount not so received are cumulatively called 'Unpaid calls' or 'Calls in Arrears'. However, it is not mandatory for a company to maintain a separate Calls-in-Arrears Account. There are also instances where some shareholders consider it discreet to pay a part or whole of the amount not yet called-up on the shares allotted to them. Any amount paid by a shareholder in the excess of the amount due from him on allotment/call (calls) is known as 'Calls in Advance' for which a separate account is maintained. A company has the power to charge interest on calls in arrears and is under an obligation to pay interest on calls-in-advance if it accepts them in accordance with the provisions of Articles of Association.

*Over Subscription:* It is possible for the shares of some companies to be over subscribed which means that applications for more shares are received than the number offered for subscription.

If the amount of minimum subscription is not received to the extent of 90%, the issue dissolves. In case the applications received are less than the number of shares offered to the public, the issue is termed as 'under subscribed'.

*Issue of Shares at Premium:* Irrespective of the fact that shares have been issued for consideration other than cash, they can be issued either at par or at premium. The issue of shares at par implies that the shares have been issued for an amount exactly equal to their face or nominal value. In case shares are issued at a premium, i.e. at an amount more than the nominal or par value of shares, the amount of premium is credited to a separate account called 'Securities Premium Reserve Account', the use of which is strictly regulated by law.

*Issue of Shares at Discount:* Shares can as well be issued at a discount, i.e. for an amount less than the nominal or par value of shares provided the company fully complies with the provisions laid down by law with regard to the same. Apart from such compliance, shares of a company cannot ordinarily be issued at a discount. According to the Companies Act, 2013, only sweat equity shares can be issued at a discount. When shares are issued at a discount, the amount of discount is debited to 'Discount on Issue of Share Account', which is in the nature of capital loss for the company.

*Forfeiture of Shares:* Sometimes, shareholders fail to pay one or more instalments on shares allotted to them. In such a case, the company has the authority to forfeit shares of the defaulters. This is called 'Forfeiture of Shares'. Forfeiture means the cancellation of allotment due to breach of contract and to treat the amount already received on such shares as forfeited to the company. The precise accounting treatment of share forfeiture depends upon the conditions on which the shares have been issued — at par, premium or discount. Generally speaking, accounting treatment on forfeiture is to reverse the entries passed till the stage of forfeiture, the amount already received on the shares being credited to Forfeiture Shares Account.

*Reissue of Shares:* The management of a company is vested with the power to reissue the shares once forfeited by it, subject of course, to the terms and conditions in the articles of association relating to the same. The shares can be reissued even at a discount provided the amount of discount allowed does not exceed the credit balance of Share forfeiture account relating to shares being reissued. Therefore, discount allowed on the reissue of forfeited shares is debited to Share forfeiture account.

Once all the forfeited shares have been reissued, any credit balance on Share forfeiture account is transferred to Capital Reserve representing profit on forfeiture of shares. In the event of all forfeited share not being reissued, the credit amount on Share forfeiture account relating to shares yet to be reissued is carried forward and the remaining balance on the account only is credited to capital reserve account.

## *Question for Practice*

### Short Answer Questions

1. What is public company?
2. What is a private company.
3. When can shares be Forfeited?
4. What is meant by Calls in Arrears?
5. What do you mean by a listed company?
6. What are the uses of securities premium?
7. What is meant by Calls in Advance?
8. Write a brief note on "Minimum Subscription".

### Long Answer Questions

1. What is meant by the word 'Company'? Describe its characteristics.
2. Explain in brief the main categories in which the share capital of a company is divided.
3. What do you mean by the term 'share'? Discuss the type of shares, which can be issued under the Companies Act, 2013 as amended to date.
4. Discuss the process for the allotment of shares of a company in case of over subscription.
5. What is a 'Preference Share'? Describe the different types of preference shares.
6. Describe the provisions of law relating to 'Calls in Arrears' and 'Calls in Advance'.
7. Explain the terms 'Over subscription' and 'Under subscription'. How are they dealt with in accounting records?
8. Describe the purposes for which a company can use the amount of Securities Premium.
9. State clearly the conditions under which a company can issue shares at a discount.
10. Explain the term 'Forfeiture of Shares' and give the accounting treatment on forfeiture.

## *Numerical Questions*

1. Anish Limited issued 30,000 equity shares of Rs.100 each payable at Rs.30 on application, Rs.50 on allotment and Rs.20 on Ist and final call. All money was duly received.

   Record these transactions in the journal of the company.

2. The Adarsh Control Device Ltd. was registered with the authorised capital of Rs.3,00,000 divided into 30,000 shares of Rs.10 each, which were offered to the public. Amount payable as Rs.3 per share on application, Rs.4 per share on allotment and Rs.3 per share on first and final call. These shares were fully subscribed and all money was dully received. Prepare journal and Cash Book.

3. Software Solution India Ltd. invited applications for 20,000 equity shares of Rs.100 each, payable Rs.40 on application, Rs.30 on allotment and Rs.30 on call. The company received applications for 32,000 shares. Application for 2,000 shares were rejected and money returned to applicants. Applications for 10,000 shares were accepted in full and applicants for 20,000 shares allotted half of the number of shares applied and excess application money adjusted into allotment. All money due on allotment and call was received.

   Prepare journal and cash book.

4. Rupak Ltd. issued 10,000 shares of Rs.100 each payable Rs.20 per share on application, Rs.30 per share on allotment and balance in two calls of Rs.25 per share. The application and allotment money were duly received. On first call, all members paid their dues except one member holding 200 shares, while another member holding 500 shares paid for the balance due in full. Final call was not made.

   Give journal entries and prepare cash book.

5. Mohit Glass Ltd. issued 20,000 shares of Rs.100 each at Rs.110 per share, payable Rs.30 on application, Rs.40 on allotment (including Premium), Rs.20 on first call and Rs.20 on final call. The applications were received for 24,000 shares and allotted 20,000 shares and rejected 4,000 shares and amount returned thereon. The money was duly received.

   Give journal entries.

6. A limited company offered for subscription of 1,00,000 equity shares of Rs.10 each at a premium of Rs.2 per share, 2,00,000 10% Preference shares of Rs.10 each at par.

   The amount on share was payable as under :

| | *Equity Shares* | *Preference Shares* |
|---|---|---|
| On Application | Rs.3 per share | Rs.3 per share |
| On Allotment | Rs.5 per share (including premium) | Rs.4 per share |
| On First Call | Rs.4 per share | Rs.3 per share |

All the shares were fully subscribed, called-up and paid.

Record these transactions in the journal and cash book of the company:

7. Eastern Company Limited, with an authorised capital of Rs.10,00,000 is divided into shares of Rs.10 each, issued 50,000 shares at a premium of Rs.3 per share payable as follows:

| | |
|---|---|
| On Application | Rs.3 per share |
| On Allotment (including premium) | Rs.5 per share |
| On first call (due three months after allotment) | Rs.3 per share |

and the balance as and when required.

Applications were received for 60,000 shares and the directors allotted the shares as follows :

(a) Applicants for 40,000 shares received in full.

(b) Applicants for 15,000 shares received an allotment of 8,000 shares.

(c) Applicants for 500 shares received 200 shares on allotment, excess money being returned.

All amounts due on allotment were received.

The first call was duly made and the money was received with the exception of the call due on 100 shares.

Give journal and cash book entries to record these transactions of the company. Also prepare the Balance Sheet of the company.

8. Sumit Machine Ltd. issued 50,000 shares of Rs.100 each at premium of 5%. The shares were payable Rs.25 on application, Rs. 50 on allotment and Rs.30 on first and final call. The issue was fully subscribed and money was duly received except the final call on 400 shares. The premium was adjusted on allotment.

Give journal entries and prepare the balance sheet.

9. Kumar Ltd. purchased assets of Rs.6,30,000 from Bhanu Oil Ltd. Kumar Ltd. issued equity share of Rs.100 each fully paid in consideration. What journal entries will be made, if the shares are issued, (a) at par, and (b) at premium of 20%.

(Answer: Numbers of shares issued (a) 6,300 (b) 5,250)

10. Bansal Heavy Machine Ltd. purchased machine worth Rs.3,20,000 from Handa Trader. Payment was made as Rs.50,000 cash and remaining amount by issue of equity shares of the face value of Rs. 100 each fully paid at an issue price of Rs.90 each.

Give journal entries to record the above transaction.

(Answer: Numbers of shares issued = 3,000 shares)

11. Naman Ltd. issued 20,000 shares of Rs.100 each, payable Rs.25 on application, Rs.30 on allotment , Rs.25 on first call and the balance on final call. All money

duly received except Anubha, who holding 200 shares did not pay allotment and calls money and Kumkum, who holding 100 shares did not pay both the calls. The directors forfeited the shares of Anubha and Kumkum.

Give journal entries.

12. Kishna Ltd. issued 15,000 shares of Rs.100 each at a premium of Rs.10 per share, payable as follows:

| | |
|---|---|
| On application | Rs.30 |
| On allotment | Rs.50 [including premium] |
| On first and final call | Rs.30 |

All the shares subscribed and the company received all the money due, with the exception of the allotment and call money on 150 shares. These shares were forfeited and reissued to Neha as fully paid share of Rs.12 each.

Give journal entries in the books of the company.

(Answer: Capital Reserve = Rs. 4,500)

13. Arushi Computers Ltd. issued 10,000 equity shares of Rs.100 each at 10% premium. The net amount payable as follows:

| | |
|---|---|
| On application | Rs.20 |
| On allotment | Rs.50 (Rs.40 + premium Rs.10 ) |
| On first call | Rs.30 |
| On final call | Rs.10 |

A shareholder holding 200 shares did not pay final call. His shares were forfeited. Out of these 150 shares were reissued to Ms.Sonia at Rs.75 per share.

Give journal entries in the books of the company.

(Answer: Capital Reserve = Rs.9,750)

14. Raunak Cotton Ltd. issued a prospectus inviting applications for 6,000 equity shares of Rs.100 each at a premium of Rs.20 per shares, payable as follows:

| | |
|---|---|
| On application | Rs.20 |
| On allotment | Rs.50 [including premium] |
| On first call | Rs.30 |
| On final call | Rs.20 |

Applications were received for 10,000 shares and allotment was made pro-rata to the applicants of 8,000 shares, the remaining applications being refused. Money received in excess on the application was adjusted toward the amount due on allotment.

Rohit, to whom 300 shares were allotted failed to pay allotment and calls money, his shares were forfeited. Itika, who applied for 600 shares, failed to pay the two calls and her shares were also forfeited. All these shares were sold to Kartika as fully paid for Rs.80 per share.

Give journal entries in the books of the company.

(Answer: Capital Reserve = Rs.15,500)

15. Himalaya Company Limited issued for public subscription of 1,20,000 equity shares of Rs.10 each at a premium of Rs.2 per share payable as under :

| | |
|---|---|
| With Application | Rs. 3 per share |
| On allotment (including premium) | Rs. 5 per share |
| On First call | Rs. 2 per share |
| On Second and Final call | Rs. 2 per share |

Applications were received for 1,60,000 shares. Allotment was made on pro-rata basis. Excess money on application was adjusted against the amount due on allotment.

Rohan, whom 4,800 shares were allotted, failed to pay for the two calls. These shares were subsequently forfeited after the second call was made. All the shares forfeited were reissued to Teena as fully paid at Rs. 7 per share.

Record journal entries and show the transactions relating to share capital in the company's balance sheet.

(Answer = Rs. 14,400)

16. Prince Limited issued a prospectus inviting applications for 20,000 equity shares of Rs.10 each at a premium of Rs.3 per share payable as follows:

| | |
|---|---|
| With Application | Rs.2 |
| On Allotment (including premium) | Rs.5 |
| On First Call | Rs.3 |
| On Second Call | Rs.3 |

Applications were received for 30,000 shares and allotment was made on pro-rata basis. Money overpaid on applications was adjusted to the amount due on allotment.

Mr. Mohit whom 400 shares were allotted, failed to pay the allotment money and the first call, and his shares were forfeited after the first call. Mr. Joly, whom 600 shares were allotted, failed to pay for the two calls and hence, his shares were forfeited.

Of the shares forfeited, 800 shares were reissued to Supriya as fully paid for Rs.9 per share, the whole of Mr. Mohit's shares being included.

Record journal entries in the books of the Company and prepare the Balance Sheet.

(Answer: Capital Reserve = Rs. 2,000)

17. Life Machine Tools Limited issued 50,000 equity shares of Rs.10 each at Rs.12 per share, payable at to Rs.5 on application (including premium), Rs.4 on allotment and the balance on the first and final call.

    Applications for 70,000 shares had been received. Of the cash received, Rs.40,000 was returned and Rs.60,000 was applied to the amount due on allotment. All shareholders paid the call due, with the exception of one shareholder of 500 shares. These shares were forfeited and reissued as fully paid at Rs.8 per share. Journalise the transactions.

    (Answer: Capital Reserve = Rs. 2,500)

18. The Orient Company Limited offered for public subscription 20,000 equity shares of Rs.10 each at a premium of 10% payable at Rs.2 on application; Rs.4 on allotment including premium; Rs.3 on First Call and Rs.2 on Second and Final call. Applications for 26,000 shares were received. Applications for 4,000 shares were rejected. Pro-rata allotment was made to the remaining applicants. Both the calls were made and all the money were received except the final call on 500 shares which were forfeited. 300 of the forfeited shares were later reissued as fully paid at Rs.9 per share. Give journal entries and prepare the balance sheet.

    (Answer: Capital Reserve = Rs. 2,100)

19. Alfa Limited invited applications for 4,00,000 of its equity shares of Rs.10 each on the following terms :

| | |
|---|---|
| Payable on application | Rs.5 per share |
| Payable on allotment | Rs.3 per share |
| Payable on first and final call | Rs.2 per share |

Applications for 5,00,000 shares were received. It was decided :

(a) to refuse allotment to the applicants for 20,000 shares;

(b) to allot in full to applicants for 80,000 shares;

(c) to allot the balance of the available shares' pro-rata among the other applicants; and

(d) to utilise excess application money in part as payment of allotment money.

One applicant, whom shares had been allotted on pro-rata basis, did not pay the amount due on allotment and on the call, and his 400 shares were forfeited. The shares were reissued @ Rs.9 per share. Show the journal and prepare Cash book to record the above.

(Answer: Capital Reserve = Rs. 2,100)

20. Ashoka Limited Company which had issued equity shares of Rs.20 each at a premium of Rs. 4 per share, forfeited 1,000 shares for non-payment of final call of Rs.2 per share. 400 of the forfeited shares were reissued at Rs.14 per share out of the remaining shares of 200 shares reissued at Rs.20 per share. Give journal entries for the forfeiture and reissue of shares and show the amount transferred to capital reserve and the balance in Share Forfeiture Account.

    (Answer: Capital Reserve = Rs. 6,800, Balance of Share Forfeiture Account: Rs. 4800)

21. Amit holds 100 shares of Rs.10 each on which he has paid Re.1 per share as application money. Bimal holds 200 shares of Rs.10 each on which he has paid Re.1 and Rs.2 per share as application and allotment money, respectively. Chetan holds 300 shares of Rs.10 each and has paid Re.1 on application, Rs.2 on allotment and Rs.3 for the first call. They all failed to pay their arrears and the second call of Rs.2 per share and the directors, therefore, forfeited their shares. The shares are reissued subsequently for Rs.11 per share as fully paid. Journalise the transactions.

    (Answer: Capital Reserve = Rs. 2,500)

22. Ajanta Company Limited having a nominal capital of Rs.3,00,000, divided into shares of Rs.10 each offered for public subscription of 20,000 shares payable at Rs.2 on application; Rs.3 on allotment and the balance in two calls of Rs.2.50 each. Applications were received by the company for 24,000 shares. Applications for 20,000 shares were accepted in full and the shares allotted. Applications for the remaining shares were rejected and the application money was refunded.

    All moneys due were received with the exception of the final call on 600 shares which were forfeited after legal formalities were fulfilled. 400 shares of the forfeited shares were reissued at Rs.9 per share.

    Record necessary journal entries and prepare the balance sheet showing the amount transferred to capital reserve and the balance in share forfeiture account.

    (Answer: Capital Reserve = Rs. 2,600)

23. Journalise the following transactions in the books Bhushan Oil Ltd.:
    (a) 200 shares of Rs.100 each issued at a premium of Rs.10 were forfeited for the non-payment of allotment money of Rs.60 per share. The first and final call of Rs.20 per share on these shares were not made. The forfeited shares were reissued at Rs.70 per share as fully paid-up.
    (b) 150 shares of Rs.10 each issued at a premium of Rs.4 per share payable with allotment were forfeited for non-payment of allotment money of Rs.8 per share including premium. The first and final calls of Rs.4 per share were not made. The forfeited shares were reissued at Rs.15 per share fully paid-up.

(c) 400 shares of Rs.50 each issued at par were forfeited for non-payment of final call of Rs.10 per share. These shares were reissued at Rs.45 per share fully paid-up.

(Answer: Capital Reserve = (a) NIL (b) Rs. 300 (c) Rs.14,000)

24. Amisha Ltd. invited applications for 40,000 shares of Rs.100 each at a premium of Rs.20 per share. Amount payable on application Rs.40 ; on allotment Rs.40 (Including premium): on first call Rs.25 and second and final call Rs.15.

Applications were received for 50,000 shares and allotment was made on pro-rata basis. Excess money on application was adjusted against the sums due on allotment.

Rohit to whom 600 shares were allotted failed to pay the allotment money and his shares were forfeited after allotment. Ashmita, who applied for 1,000 shares failed to pay the two calls and her shares were forfeited after the second call. Of the shares forfeited, 1,200 shares were sold to Kapil for Rs.85 per share as fully paid, the whole of Rohit's shares being included.

Record necessary journal entries.

(Answer: Capital Reserve = Rs. 48,000 Balace of Share Forfeiture A/c Rs.12,000)

## Answers to Test your Understanding

### Test your Understanding – I

(a) True, (b) False, (c) False, (d) True, (e) True, (f) True, (g) False, (h) True, (i) False, (j) True, (k) True

### Test your Understanding – II

(a) (ii), (b) (iii), (c) (i), (d) (ii), (e) (i), (f) (iii), (g) (iii)

### Test your Understanding – III

(a) Rs. 8, (b) Rs. 4,

| | | | |
|---|---|---|---|
| (c) Vendor | Dr. | 1,00,000 | |
| To Share Capital A/c | | | 1,00,000 |

# Issue and Redemption of Debentures

2

**Learning Objectives**

*After studying this chapter you will be able to :*

- *state the meaning of debenture and explain the difference between debentures and shares;*
- *describe various types of debentures;*
- *record the journal entries for the issue of debentures at par, at a discount and at premium;*
- *explain the concept of debentures issued for consideration other than cash and the accounting thereof;*
- *explain the concept of issue of debentures as a collateral security and the accounting thereof;*
- *record the journal entries for issue of debentures with various terms of issue, terms of redemption;*
- *show the items relating to issue of debentures in company's balance sheet;*
- *describe the methods of writing-off discount/loss on issue of debentures;*
- *explain the methods of redemption of debentures and the accounting thereof; and*
- *explain the concept of sinking fund, its use for redemption of debentures and the accounting thereof.*

A company raises its capital by means of issue of shares. But the funds raised by the issue of shares are seldom adequate to meet their long term financial needs of a company. Hence, most companies turn to raising long-term funds also through debentures which are issued either through the route of private placement or by offering the same to the public. The finances raised through debentures are also known as long-term debt. This chapter deals with the accounting treatment of issue and redemption of debentures and other related aspects.

## SECTION I

### 2.1 Meaning of Debentures

*Debenture*: The word 'debenture' has been derived from a Latin word 'debere' which means to borrow. Debenture is a written instrument acknowledging a debt under the common seal of the company. It contains a contract for repayment of principal after a specified period or at intervals or at the option of the company and for payment of interest at a fixed rate payable usually either half-yearly or yearly on fixed dates. According to section 2(30) of The Companies Act, 2013 'Debenture' includes Debenture Inventory, Bonds and any other securities of a company whether constituting a charge on the assets of the company or not.

*Bond:* Bond is also an instrument of acknowledgement of debt. Traditionally, the Government issued bonds, but these days, bonds are also being issued by semi-government and non-governmental organisations. The terms 'debentures' and 'Bonds' are now being used inter-changeably.

## 2.2 Distinction between Shares and Debentures

*Ownership*: A 'share' represents ownership of the company whereas a debenture is only acknowledgement of Debt. A share is a part of the owned capital whereas a debenture is a part of borrowed capital.

*Return:* The return on shares is known as dividend while the return on debentures is called interest. The rate of return on shares may vary from year to year depending upon the profits of the company but the rate of interest on debentures is prefixed. The payment of dividend is an appropriation of profits, whereas the payment of interest is a charge on profits and is to be paid even if there is no profit.

*Repayment:* Normally, the amount of shares is not returned during the life of the company, whereas, generally, the debentures are issued for a specified period and repayable on the expiry of that period. However, in the year 1998, the amendements (Section 77A and 77 B sub Section 2) in the Companies Act, permitted companies to buy back its shares specially when market value of shares are less than its book value.

*Voting Rights:* Shareholders enjoy voting rights whereas debentureholders do not normally enjoy any voting right.

*Security :* Shares are not secured by any charge whereas the debentures are generally secured and carry a fixed or floating charge over the assets of the company.

*Convertibility:* Shares cannot be converted into debentures whereas debentures can be converted into shares if the terms of issue so provide, and in that case these are known as convertible debentures.

## 2.3 Types of Debentures

A company may issue different kinds of debentures which can be classified as under:

### *2.3.1 From the Point of view of Security*

*(a)* *Secured Debentures*: Secured debentures refer to those debentures where a charge is created on the assets of the company for the purpose of payment in case of default. The charge may be fixed or floating. A fixed charge is created on a specific asset whereas a floating charge is on the general assets of the company. The fixed charge is created against those assets which are held by a company for use in operations not meant for sale whereas floating charge involves all assets excluding those assigned to the secured creditors.

*(b)* *Unsecured Debentures*: Unsecured debentures do not have a specific charge on the assets of the company. However, a floating charge may be created on these debentures by default. Normally, these kinds of debentures are not issued.

### *2.3.2 From the Point of view of Tenure*

*(a)* *Redeemable Debentures:* Redeemable debentures are those which are payable on the expiry of the specific period either in lump sum or in Instalments during the life time of the company. Debentures can be redeemed either at par or at premium.

*(b)* *Irredeemable Debentures:* Irredeemable debentures are also known as *Perpetual Debentures* because the company does not give any undertaking for the repayment of money borrowed by issuing such debentures. These debentures are repayable on the winding-up of a company or on the expiry of a long period.

### *2.3.3 From the Point of view of Convertibility*

*(a)* *Convertible Debentures:* Debentures which are convertible into equity shares or in any other security either at the option of the company or the debentureholders are called convertible debentures. These debentures are either fully convertible or partly convertible.

*(b)* *Non-Convertible Debentures:* The debentures which cannot be converted into shares or in any other securities are called non-convertible debentures. Most debentures issued by companies fall in this category.

### *2.3.4 From Coupon Rate Point of view*

*(a)* *Specific Coupon Rate Debentures*: These debentures are issued with a specified rate of interest, which is called the coupon rate. The specified rate may either be fixed or floating. The floating interest rate is usually tagged with the bank rate.

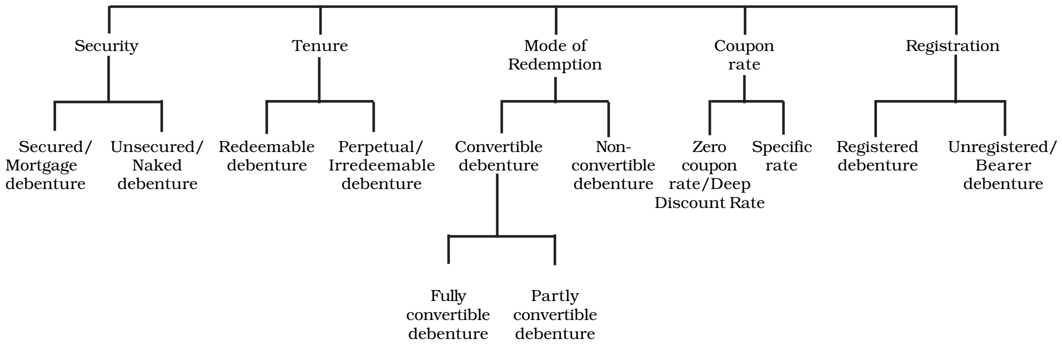
(b) *Zero Coupon Rate Debentures*: These debentures do not carry a specific rate of interest. In order to compensate the investors, such debentures are issued at substantial discount and the difference between the nominal value and the issue price is treated as the amount of interest related to the duration of the debentures.

### 2.3.5 From the view Point of Registration

(a) *Registered Debentures*: Registered debentures are those debentures in respect of which all details including names, addresses and particulars of holding of the debentureholders are entered in a register kept by the company. Such debentures can be transferred only by executing a regular transfer deed.

(b) *Bearer Debentures*: Bearer debentures are the debentures which can be transferred by way of delivery and the company does not keep any record of the debentureholdeRs  Interest on debentures is paid to a person who produces the interest coupon attached to such debentures.

**Types of Debenture/Bond**




## 2.4 Issue of Debentures

The procedure for the issue of debentures is the same as that for the issue of shares. The intending investors apply for debentures on the basis of the prospectus issued by the company. The company may either ask for the entire amount to be paid on application or by means of instalments on application, on allotment and on various calls. Debentures can be issued at par, at a premium or at a discount. They can also be issued for consideration other than cash or as a collateral security.

### 2.4.1 Issue of Debentures for Cash

Debentures are said to be issued at par when their issue price is equal to the face value. The journal entries recorded for such issue are as under:

(a) *If whole amount is received in one instalment:*

(i) On receipt of the application money
Bank A/c Dr.
To Debenture Application & Allotment A/c

(ii) On Allotment of debentures
Debenture Application & Allotment A/c Dr.
To Debentures A/c

(b) *If debenture amount is received in two instalments:*

(i) On receipt of application money
Bank A/c Dr.
To Debenture Application A/c

(ii) For adjustment of applications money on allotment
Debenture Application A/c Dr.
To Debentures A/c

(iii) For allotment money due
Debenture Allotment A/c Dr.
To Debentures A/c

(iv) On receipt of allotment money
Bank A/c Dr.
To Debenture Allotment A/c

(c) *If debenture money is received in more than two instalments*
*Additional entries:*

(i) On making the first call
Debenture First Call A/c Dr.
To Debentures A/c

(ii) On the receipt of the first call
Bank A/c Dr.
To Debenture First Call A/c

*Note:* Similar entries may be made for the second call and final call. However, normally the whole amount is collected on application or in two instalments, i.e., on application and allotment.

### Illustration 1

ABC Lmited issued Rs 10,000, 12% debentures of Rs 100 each payable Rs 30 on application and remaining amount on allotment. The public applied for 9,000 debentures which were fully allotted, and all the relevant allotment money was duly received. Give journal entries in the books of ABC Ltd., and exhibit the relevent information in the balance sheet.

**Solution:**

**Books of ABC Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 2,70,000 | |
| | To 12% Debenture Application A/c | | | 2,70,000 |
| | (Application money on 9,000 debentures received) | | | |
| | 12% Debenture Application A/c Dr. | | 2,70,000 | |
| | To 12% Debentures A/c | | | 2,70,000 |
| | (Application money transferred to debentures Account on allotment) | | | |
| | 12% Debenture Allotment A/c Dr. | | 6,30,000 | |
| | To 12% Debentures A/c | | | 6,30,000 |
| | (Amount due on 9,000 debentures on allotment @ Rs 70 per debenture) | | | |
| | Bank A/c Dr. | | 6,30,000 | |
| | To 12% Debenture Allotment A/c | | | 6,30,000 |
| | (Amount received on allotment) | | | |

**ABC Limited**
***Balance Sheet as at ................**

| Particulars | Note No. | Amount (Rs) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| Non-current liabilities | 1 | **9,00,000** |
| Long-term borrowings | | |
| **II. Assets** | | |
| Current assets | | |
| Cash and cash equivalents | 2 | **9,00,000** |

* Relevant data only

Notes to Accounts

| Particulars | Amount (Rs) |
|---|---|
| 1. Long-term borrowings | |
| 9,000, 12% Debentures of Rs 100 each | **9,00,000** |
| 2. Cash and cash equivalents | |
| Cash at bank | **9,00,000** |

### 2.4.2 Issue of Debentures at a Discount

When a debenture is issued at a price below its nominal value, it is said to be issued at a discount. For example, the issue of Rs. 100 debentures at Rs. 95, Rs. 5 being the amount of discount. Discount on issue of debentures is a capital loss and is shown under the line item 'Other Non-Current Assets' or 'Other Current Assets' depending upon the time period in which it is to be written off. The discount on issue of debentures can be written off either by debiting it to Statement of Profit and Loss or out of Securities Premium Reserve A/c, if any, during the life time of debentures.

Discount on issue of debentures to be written off within 12 months of the balance sheet date or the period of operating cycle is shown under 'Other Current Assets' and the part which is to be written off after 12 months of balance sheet is shown under 'Other Non-Current Assets'.

The Companies Act, 2013 does not impose any restrictions upon the issue of debentures at a discount.

***Illustration 2***

TV Components Ltd., issued 10,000, 12% debentures of Rs 100 each at a discount of 5% payable as follows:

On application Rs 40
On allotment Rs 55

Show the journal entries including those for cash, assuming that all the instalments were duly collected. Also show the relevant portion of the balance sheet.

***Solution:***

**Books of TV Components Ltd.**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 4,00,000 | |
| | To 12% Debenture Application A/c | | | 4,00,000 |
| | (Receipt of application money @ Rs 30 per debenture) | | | |
| | 12% Debenture Application A/c Dr. | | 4,00,000 | |
| | To 12% Debenture A/c | | | 4,00,000 |
| | (Transfer of application money to debenture account) | | | |
| | 12% Debenture Allotment A/c Dr. | | 5,50,000 | |
| | Discount on Issue of Debentures A/c | | 50,000 | |
| | To 12% Debenture A/c | | | 6,00,000 |
| | (Allotment money due on debentures) | | | |
| | Bank A/c Dr. | | 5,50,000 | |
| | To 12% Debenture Allotment A/c | | | 5,50,000 |
| | (Receipt of allotment money on debentures) | | | |

**TV Components Limited**

**Balance Sheet as at..................**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| Long-term borrowings | 1 | **10,00,000** |
| **II. Assets** | | |
| 1. Non-current assets | | |
| Other non-current assets | 2 | 45,000 |
| 2. Current assets | | |
| a) Cash and cash equivalents | 3 | 9,50,000 |
| b) Other current assets | 4 | 5,000 |
| | | **10,00,000** |

Notes to Accounts

| *Particulars* | *Amount (Rs)* |
|---|---|
| 1. Long-term borrowings | |
| 10,000, 12% secured debentures of Rs 100 each | 10,00,000 |
| 2. Other non-current assets | |
| Discount on issue of debentures | 45,000 |
| 3. Cash and cash equivalents | |
| Cash at bank | 9,50,000 |
| 4. Other current assets | |
| Discount on issue of debentures (To be written-off within 12 months of the balance sheet date or the period of operating cycle) | 5,000 |

Notes:

1 It is presumed that debentures are redeemable after 10 years.

*Relevant data only.

### *2.4.3 Debentures issued at Premium*

A debenture is said to be issued at a premium when the price charged is more than its nominal value. For example, the issue of Rs 100 debentures for Rs 110, (Rs 10 is being the premium). The amount of premium is credited to Securities Premium Reserve account and is shown on the liabilities side of the balance sheet under the head "Reserves and Surpluses".

### *Illustration 3*

XYZ Industries Ltd., issued 2,000, 10% debentures of Rs 100 each, at a premium of Rs 10 per debenture payable as follows:

| | |
|---|---|
| On application | Rs 50 |
| On allotment | Rs 60 |

The debentures were fully subscribed and all money was duly received. Record the journal entries in the books of a company. Show how the amounts will appear in the balance sheet.

***Solution:***

**Books of XYZ Industries Limited**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 1,00,000 | |
| | To 10% Debenture Application A/c | | | 1,00,000 |
| | (Application money Rs 50 per debentures received) | | | |
| | 10% Debenture Application A/c Dr. | | 1,00,000 | |
| | To 10% Debentures A/c | | | 1,00,000 |
| | (Transfer of application money to debenture account) | | | |
| | 10% Debenture Allotment A/c Dr. | | 1,20,000 | |
| | To 10% Debentures A/c | | | 1,00,000 |
| | To Securities Premium Reserve A/c | | | 20,000 |
| | (Allotment money due on debentures including the premium) | | | |
| | Bank A/c Dr. | | 1,20,000 | |
| | To 10% Debenture Allotment A/c | | | 1,20,000 |
| | (Allotment money received) | | | |

**XYZ Industries Limited**

**Balance Sheet as at ———**

| Particulars | Note No. | Amount (Rs) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholders' Funds | | |
| Reserve and Surplus | 1 | 20,000 |
| 2. Non-current Liabilities | | |
| Long-term borrowings | 2 | 2,00,000 |
| | | **2,20,000** |
| **II. Assets** | | |
| Current Assets | | |
| Cash and cash equivalents | | **2,20,000** |

Notes to Accounts

| *Particulars* | *Amount (Rs)* |
|---|---|
| 1. Reserve and surplus | |
| Securties Premium Reserve | **20,000** |
| 2. Long-term borrowings | |
| 2,000, 10% debentures of Rs 100 each | **2,00,000** |
| 3. Cash and cash equivalents | |
| Cash at bank | **2,20,000** |

### *Illustration 4*

*A Limited* issued 5,000, 10% debentures of Rs 100 each, at a premium of Rs 10 per debenture payable as follows:

| | |
|---|---|
| On application | Rs 25 |
| On allotment | Rs 45 (including premium) |
| On first and final call | Rs 40 |

The debentures were fully subscribed and all money was duly received. Record the necessary entries in the books of the company. Show how the amounts will appear in the balance sheet.

***Solution:***

**Books of *A Limited***
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Bank A/c Dr. | | 1,25,000 | |
| | To 10% Debenture Application A/c | | | 1,25,000 |
| | (Application money on 10% debentures received) | | | |
| | 10% Debenture Application A/c Dr. | | 1,25,000 | |
| | To 10% Debentures A/c | | | 1,25,000 |
| | (Transfer of application money on allotment) | | | |
| | 10% Debenture Allotment A/c Dr. | | 2,25,000 | |
| | To 10% Debentures A/c | | | 1,75,000 |
| | To Securities Premium Reserve A/c | | | 50,000 |
| | (Allotment money of due on debentures including the premium) | | | |

| | | | | |
|---|---|---|---|---|
| | Bank A/c Dr.<br>To 10% Debenture Allotment A/c<br>(Allotment money received) | | 2,25,000 | <br>2,25,000 |
| | 10% Debenture First & Final Call A/c Dr.<br>To 10% Debentures A/c<br>(First and final call money due on debentures) | | 2,00,000 | <br>2,00,000 |
| | Bank A/c Dr.<br>To 10% Debenture First & Final Call A/c<br>(First and final call money received) | | 2,00,000 | <br>2,00,000 |

**A Limited**

**Balance Sheet as at ———**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholders' Funds | | |
| a) Reserve and Surplus | 1 | 50,000 |
| 2. Non-current Liabilities | | |
| Long term borrowings | 2 | 5,00,000 |
| **Total** | | **5,50,000** |
| **II. Assets** | | |
| 1. Current assets | | |
| a) Cash and cash equivalents | | **5,50,000** |

Notes to Accounts

| *Particulars* | *Amount (Rs)* |
|---|---|
| 1. Reserve and surplus | |
| Securities Premium Reserve | **50,000** |
| 2. Long-term borrowings | |
| 5,000, 10% debentures of Rs 100 each | **5,00,000** |

## 2.5 Over Subscription

When the number of debentures applied for is more than the number of debentures offered to the public, the issue is said to be over subscribed. A company, however, cannot allot more debentures than it has invited for subscription. The excess money received on over subscription may, however, be retained for adjustment towards allotment and the respective calls to be made. But the money received from applicants to whom no debentures have been allotted, will be refunded to them.

***Illustration 5***

X Limited Issued 10,000, 12% debentures of Rs 100 each payable Rs 40 on application and Rs 60 on allotment. The public applied for 14,000 debentures. Applications for 9,000 debentures were accepted in full; applications for 2,000 debentures were allotted 1,000 debentures and the remaining applications, were rejected. All money was duly received. Journalise the transactions.

***Solution:***

**Books of X Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Bank A/c Dr. | | 5,60,000 | |
| | To 12% Debenture Application A/c | | | 5,60,000 |
| | (Receipt of application money on 14,000 debentures) | | | |
| | 12% Debenture Application A/c Dr. | | 5,60,000 | |
| | To 12% Debentures A/c | | | 4,00,000 |
| | To Debentures Allotment A/c | | | 40,000 |
| | To Bank A/c | | | 1,20,000 |
| | (Debenture Application money transferred to Debenuture A/c, Excess application money credited to Debenture Allotment account and money refunded on rejected application) | | | |
| | 12% Debenture Allotment A/c Dr. | | 6,00,000 | |
| | To 12% Debentures A/c | | | 6,00,000 |
| | (Amount due on allotment on 10,000 debentures) | | | |
| | Bank A/c Dr. | | 5,60,000 | |
| | To Debenture Allotment A/c | | | 5,60,000 |
| | (Allotment money received) | | | |

## 2.6 Issue of Debentures for Consideration other than Cash

Sometimes a company purchase assets from vendors and instead of making payment in cash issues debentures for consideration thereof. Such issue of debentures is called debentures issued for consideration other than cash. In that case also, the debentures may be issued at par, at a premium or at a discount then entries made in such a situation are similar to those of the shares issued for consideration other than cash, which are as follows :

1. *On purchase of assets*

   Sundry Assets A/c Dr.
   To Vendor's

2. *On issue of debentures*

   *(a) At par*

   Vendors Dr.
   To Debentures A/c

   *(b) At premium*

   Vendors Dr.
   To Debentures A/c
   To Securities Premium Reserve A/c

   *(c) At a discount*

   Vendors Dr.
   Discount on Issue of Debenture A/c Dr.
   To Debentures A/c

### *Illustration 6*

Aashirward Company Limited purchased assets of the book value of Rs 2,00,000 from another company and agreed to make the payment of purchase consideration by issuing 2,000, 10% debentures of Rs 100 each.

Record the necessary journal entries.

### *Solution:*

**Books of Aashirwad Company Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Sundry Assets A/c Dr.<br>To Vendors<br>(Assets purchased from vendors) | | 2,00,000 | <br>2,00,000 |
| | Vendors Dr.<br>To 10% Debentures A/c<br>(Allotment of debentures to vendors as purchase consideration) | | 2,00,000 | <br>2,00,000 |

### *Illustration 7*

Rai Company purchased assets of the book value of Rs 2,20,000 from another company and agreed to make the payment of purchase consideration by issuing 2,000, 10% debentures of Rs 100 each at a premium of 10%.

Record necessary journal entries.

***Solution:***

**Books of Rai Company Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Sundry Assets A/c Dr. | | 2,20,000 | |
| | To Vendors | | | 2,20,000 |
| | (Assets purchased from vendors) | | | |
| | Vendors Dr. | | 2,20,000 | |
| | To 10% Debentures A/c | | | 2,00,000 |
| | To Securities Premium Reserve A/c | | | 20,000 |
| | (Allotment of 2,000 debentures of Rs 100 each at a premium of 10% as purchase consideration) | | | |

### *Illustration 8*

National Packaging Company purchased assets of the value of Rs 1,90,000 from another company and agreed to make the payment of purchase consideration by issuing 2,000, 10% debentures of Rs 100 each at a discount of 5%.

Record necessary journal entries.

***Solution:***

**Books of National Packaging Company**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Sundry Assets A/c Dr. | | 1,90,000 | |
| | To Vendors | | | 1,90,000 |
| | (Assets purchased from vendors) | | | |
| | Vendors Dr. | | 1,90,000 | |
| | Discount on Issue of Debenture A/c Dr. | | 10,000 | |
| | To 10% Debentures A/c | | | 2,00,000 |
| | (Allotment of 2,000 debentures of Rs 100 each at a discount of 5% as purchase consideration) | | | |

***Illustration 9***

G.S. Rai company purchased assets of the book value of Rs. 99,000 from another firm. It was agreed that purchase consideration be paid by issuing 11% debentures of Rs. 100 each. Assume debentures have been issued.

1. At par
2. At discount of 10%, and
3. At a premium of 10%.

Record necessary journal entries.

***Solution:***

**Books of G.S. Rai Company Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Sundry Assets A/c Dr.<br>To Vendors<br>(Assets purchased from vendors) | | 99,000 | <br>99,000 |
| In Ist Case | Vendors Dr.<br>To 10% Debentures A/c<br>(Allotment of debentures to vendors as purchase consideration) | | 99,000 | <br>99,000 |
| In IInd Case | Vendors Dr.<br>Discount on Issue of Debenture A/c Dr.<br>To 10% Debentures A/c<br>(Allotment of 1,100 debenture of Rs 100 issued at discount of 10% to vendor) | | 99,000<br>11,000 | <br><br>1,10,000 |
| In IIIrd Case | Vendors Dr.<br>To 11% Debentures A/c<br>To Securities Premium Reserve A/c<br>(Allotment of 900 debentures of Rs 100 issued at a premium of 10% to the vendors) | | 99,000 | <br>90,000<br>9,000 |

Sometimes a company may purchase the assets as well as takeover its liabilities of another concern. It happens usually in case of purchase of the whole business of the other concern. In such a situation, the purchase consideration will be equal to the value of net assets (Assets - Liabilities) taken over, and if the whole amount of the consideration is paid by issue of debentures, the journal entry will be:

Sundry Assets A/c Dr.
To Sundry Liabilities A/c
To Vendors
(Purchase of the Vendors' business)

***Illustration 10***

Romi Ltd. acquired assets of Rs. 20 lakh and took over creditors of Rs. 2 lakh from Kapil Enterprises. Romi Ltd., issued 8% debentures of Rs 100 each at par as purchase consideration. Record necessary journal entries in the books of Romi Ltd.

***Solution:***

**Books of Romi Ltd.**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Sundry Assets A/c Dr.<br>To Kapil Enterprises<br>To Sundry Creditors A/c<br>(Purchase of business from Kapil Enterprises) | | 20,00,000 | <br>18,00,000<br>2,00,000 |
| | Kapil Enterprises Dr.<br>To 8% Debentures A/c<br>(Issue of 18,000, 8% debentures of Rs 100 each) | | 18,00,000 | <br>18,00,000 |

In case of the whole business being taken over if the amount of debentures issued is more than the amount of the net assets taken over, the difference (excess) will be treated as value of goodwill and the same shall also be debited while passing the journal entry for the purchase of vender's business (see Illustration 11). But if it is the other way round, i.e., the value of debentures is less than the value of the net assets taken over the difference will be credited to capital Reserve accounts (See Illustration 12).

***Illustration 11***

Blue Prints Ltd., purchased building worth Rs.1,50,000, machinery worth Rs.1,40,000 and furniture worth Rs.10,000 from XYZ Co., and took over its liabilities of Rs. 20,000 for a purchase consideration of Rs. 3,15,000. Blue Prints Ltd., paid the purchase consideration by issuing 12% debentures of Rs.100 each at a premium of 5%. Record necessary journal entries.

**Solution:**

**Books of Blue Prints Limited**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|---|
| | Building A/c | Dr. | | 1,50,000 | |
| | Plant & Machinery A/c | Dr. | | 1,40,000 | |
| | Furniture A/c | Dr. | | 10,000 | |
| | Goodwill A/c [1] | Dr. | | 35,000 | |
| | To Liabilities (Sundry) | | | | 20,000 |
| | To XYZ Co. | | | | 3,15,000 |
| | (Purchase of assets and taking over of liabilities of XYZ Co.) | | | | |
| | XYZ Co. | Dr. | | 3,15,000 | |
| | To 12% Debentures A/c | | | | 3,00,000 |
| | To Securities Premium Reserve A/c | | | | 15,000 |
| | (Issue of 3,000 debentures at a premium of 5%) | | | | |

Note: 1. Since the purchase consideration is more than net assets taken over, the difference has been debited to goodwill account.

2. No. of debentures issued $= \dfrac{\text{Purchase Consideration}}{\text{Issue Price of a Debenture}}$

$= \dfrac{\text{Rs } 3,15,000}{105} = 3,000$

***Illustration 12***

*A Limited* took over the assets of Rs. 3,00,000 and liabilities of Rs.10,000 from B & Co. Ltd., for an agreed purchase consideration of Rs. 2,70,000 to be satisfied by issue of 15% debentures of Rs. 100 at 20% premium. Show the journal entries in the journal of *A Limited.*

**Solution:**

**Books of *A Limited***
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|---|
| | Sundry Assets A/c | Dr. | | 3,00,000 | |
| | To Sundry Liabilities A/c | | | | 10,000 |
| | To B & Co. Ltd. | | | | 2,70,000 |
| | To Capital Reserve | | | | 20,000 |
| | (Purchased assets and took over liabilities from B Ltd.) | | | | |

| | | | | |
|---|---|---|---|---|
| | B & Co. Ltd. Dr. | | 2,70,000 | |
| | To 15% Debentures A/c | | | 2,25,000 |
| | To Securities Premium Reserve A/c | | | 45,000 |
| | (Issue of 2,250 debentures of Rs 100 each at a premium of 20%) | | | |

**Do it Yourself**

1. Amrit Company Limited purchased assets of the value of Rs. 2,20,000 from another company and agreed to make the payment of purchase consideration by issuing 2,000, 10% debentures of Rs.100 each at a premium of 10%. Record necessary journal entries.
2. A company purchased assets of the value of Rs.1,90,000 from another company and agreed to make the payment of purchase consideration by issuing 2,000, 10% debentures of Rs. 100 each at a discount of 5%. Record necessary journal entries.
3. Rose Bond Limited purchased a business for Rs. 22,00,000. Purchase Price was paid by 6% debentures. Debentures of Rs. 20,00,000 were issued at a premium of 10% for the purpose. Record necessary journal entries.
4. Nikhil and Ashwin Limited bought business of Agarwal Limited consisting sundry assts of Rs. 3,60,000, sundry creditors Rs.1,00,000 for a consideration of Rs. 3,07,200. It issued 14% debentures of Rs. 100 each fully paid at a discount of 4% in satisfaction of purchase consideration. Record necessary journal entries.

***Illustration 13***

Suvidha Ltd. purchased machinery worth Rs.1,98,000 from Suppliers Ltd. The payment was made by issue of 12% debentures of Rs.100 each.

Pass the necessary journal entries for the purchase of machinery and issue of debentures when:

(i) Debentures are issued at par;
(ii) Debentures are issued at 10% discount; and
(iii) Debentures are issued at 10% premium

***Solution:***

**Books of Suvidha Ltd.**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Machinery A/c Dr. | | 1,98,000 | |
| | To Suppliers Ltd. | | | 1,98,000 |
| | (Machinery purchased) | | | |

| | | | | |
|---|---|---|---|---|
| Case (i) | When debentures are issued at par: | | | |
| | Suppliers Ltd. Dr. | | 1,98,000 | |
| | To 12% Debentures A/c | | | 1,98,000 |
| | (12% Debentures issued to Suppliers Ltd.) | | | |
| Case (ii) | When debentures are issued at 10% discount: | | | |
| | Suppliers Ltd. Dr. | | 1,98,000 | |
| | Discount on Issue of Debentures A/c Dr. | | 22,000 | |
| | To 12% Debentures A/c | | | 2,20,000 |
| | (12% Debentures issued to Suppliers Ltd. at 10% discount) | | | |
| Case (iii) | When debentures are issued at 10% premium: | | | |
| | Suppliers Ltd. Dr. | | 1,98,000 | |
| | To 12% Debentures A/c | | | 1,80,000 |
| | Securities Premium Reserve A/c | | | 18,000 |
| | (12% Debentures issued to Suppliers Ltd. at 10% premium) | | | |

*Workings:*

(a)

| | *(Rs)* |
|---|---|
| Face value of debenture | 100 |
| *Less:* Discount 10% | 10 |
| Value at which debenture issued | 90 |

Number of debentures issued in case of 10% discount $= \dfrac{\text{Rs. } 1{,}98{,}000}{90}$

= 2,200 debenture

(b)

| | *(Rs)* |
|---|---|
| Face value of debenture | 100 |
| *Add:* Premium 10% | 10 |
| Value at which debenture issued | 110 |

Number of debentures issued in case of 10% premium $= \dfrac{\text{Rs.} 1{,}98{,}000}{110}$

= 1,800 Debentures

## 2.7 Issue of Debentures as a Collateral Security

A collateral security may be defined as a subsidiary or secondary or additional security besides the primary security when a company obtains a loan or overdraft from a bank or any other financial Institution. It may pledge or mortgage some assets as a secured loan against the said loan. But the lending institutions may insist on additional assets as collateral security so that the amount of loan can be realised in full with the help of collateral security in case the amount from the sale of principal security falls short of the loan money. In such situation, the company may issue its own debentures to the lenders in addition to some other assets already pledged. Such an issue of debentures is known as 'Debentures issued as Collateral Security'.

If the company fails to repay the loan along with interest, the lender is free to receive his money from the sale of primary security and if the realisable value of the primary security falls short to cover the entire amount, the lender has the right to invoke the benefit of collateral security whereby debentures may either be presented for redemption or sold in the open market.

Debentures issued as collateral security can be dealt within two ways in the books of the company:

### *First Method*

No entry is made in the books of accounts since no liability is created by such issue. However, on the liability side of the balance sheet, below the item of loan, a note to the effect that it has been secured by issue of debentures as a collateral security is appended. For example, X Company has issued 9%, 10,000 debentures of Rs.100 each for a loan of Rs.10, 00,000 taken from a bank. This fact may be shown in the balance sheet as under:

**X Company**
**Balance Sheet as at ________**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| Long-term borrowings | 1 | **10,00,000** |

Notes to Accounts

| *Particulars* | *Amount (Rs)* |
|---|---|
| 1. Long-term borrowings<br>Bank Loan<br>(Secured by issue of 10,000, 10% debentures of Rs. 10 each as Collatoral Security) | **10,00,000** |

### *Second Method*

The issue of debentures as a collateral security may be recorded by means of journal entry as follows:

*Journal Entries*

*i. Issue of 10,000, 9% debentures of Rs. 100 each as collateral security for bank loan of Rs. 10,00,000.*

| | | | |
|---|---|---|---|
| Debenture Suspense A/c | Dr. | 10,00,000 | |
| To 9% Debentures A/c | | | 10,00,000 |

*ii. For cancellation of 9% debentures as collateral security on repayment of bank loan.*

Debenture Suspense account will appear as a deduction from the debentures in notes to accounts of long-term borrowings. When loan is repaid the above entry will be cancelled by a reverse entry :

| | | | |
|---|---|---|---|
| 9% Debentures A/c | Dr. | 10,00,000 | |
| To Debenture Suspense A/c | | | 10,00,000 |

**Balance Sheet of X Co. ____________ (Extract)**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| Long term borrowings | 1 | **10,00,000** |

Notes to Accounts

| *Particulars* | *(Rs)* | *Amount (Rs)* |
|---|---|---|
| 1. Long term borrowings | | |
| Bank loan | | 10,00,000 |
| 10,000, 9% debentures of Rs 100 each | 10,00,000 | |
| Less: Debenture suspense | 10,00,000 | — |
| | | **10,00,000** |

### *Illustration 14*

A company took a loan of Rs. 10,00,000 from Punjab National Bank and issued 10% debentures of Rs. 12,00,000 of Rs. 100 each as a collateral security. Explain how you will deal with the issue of debentures in the books of the company.

***Solution:***

*First Method:*

**Balance Sheet (Extract)**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| Long-term borrowings | 1 | **10,00,000** |

Notes to Accounts

| *Particulars* | *Amount (Rs)* |
|---|---|
| 1. Long-term borrowings<br>Bank loan<br>(Secured by issue of 12,000, 10% debentures of Rs. 100 each as Collatoral Security | **10,00,000** |

*Second Method:*

**Journal Entries**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Debenture Suspense A/c Dr. | | 12,00,000 | |
| | To 10% Debentures A/c | | | 12,00,000 |
| | (12,000 debenture of Rs. 100 each issued as collateral security to P.N.Bank) | | | |

**Balance Sheet (Extract)**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| Long-term borrowings | 1 | **10,00,000** |

Notes to Accounts

| *Particulars* | *(Rs)* | *Amount (Rs)* |
|---|---|---|
| 1. Long-term borrowings | | |
| Secured Loan from PNB | | 10,00,000 |
| 12,000, 10% debentures of Rs. 100 each | 12,00,000 | |
| Less: Debenture Suspense | 12,00,000 | — |
| | | **10,00,000** |

**Do it Yourself**

1. Raghuveer Limited issued Rs 10,00,000, 8% debentures as follows to:

| | | Rs |
|---|---|---|
| 1. | Sundry Subscribers for Cash at 90% | 5,50,000 |
| 2. | Vendor of Machinery for Rs 2,00,000 in satisfaction of his claim | 2,00,000 |
| 3. | Bankers as Collateral Security for a bank loan worth Rs 20,00,000 for which principal security is Business Premises worth Rs 22,50,000. | 2,50,000 |

   The issue (1) and (2) are redeemable at the end of 10 years at par. State how the debenture will be dealt with while preparing the balance sheet of a company.

2. Hassan Limited took a loan of Rs 30,00,000 from a bank against primary security worth Rs 40,00,000 and issued 4,000, 6% debentures of Rs 100 each as a collateral security. The company again after one year took a loan of Rs 50,00,000 from bank against Plant as primary security and deposited 6,000, 6% debentures of Rs 100 each as collateral security. Record necessary journal entries and prepare balance sheet of the company.
3. Meghnath Limited took a loan of Rs 1,20,000 from a bank and deposited 1,400, 8% debentures of Rs 100 each as collateral security along with primary security worth Rs 2 lakh. Company again took a loan of Rs 80,000 after two months from a bank and deposited 1,000, 8% debentures of Rs 100 each as collateral security. Record necessary journal entries and prepare balance sheet of the company.

## 2.8 Terms of Issue of Debentures

When a company issues debentures, it usually mentions the terms on which they will be redeemed on their maturity. Redemption of debentures means discharge of liability on account of debentures by repayment made to the debenture holders. Debentures can be redeemed either at par or at a premium.

Depending upon the terms and conditions of issue and redemption of debentures, the following six situations are commonly found in practice.

(i) Issued at par and redeemable at par

(ii) Issued at discount and redeemable at par

(iii) Issued at a premium and redeemable at par

(iv) Issued at par and redeemable at a premium

(v) Issued at a discount and redeemable at a premium

(vi) Issued at a premium and redeemable at a premium

In all the above six cases, the following journal entries will be passed:

1. *Issue at par and redeemable at par*

| | | |
|---|---|---|
| (a) | Bank A/c | Dr. |
| | To Debenture Application & Allotment A/c | |
| | (Receipt of application money) | |
| (b) | Debenture Application & Allotment A/c | Dr. |
| | To Debentures A/c | |
| | (Allotment of debentures) | |

2. *Issue at a discount and redeemable at par*

| | | |
|---|---|---|
| (a) | Bank A/c | Dr. |
| | To Debenture Application & Allotment A/c | |
| | (Receipt of application money) | |
| (b) | Debenture Application & Allotment A/c | Dr. |
| | Discount on Issue of Debentures A/c | Dr. |
| | To Debentures A/c | |
| | (Allotment of debentures at a discount) | |

3. *Issue at premium and redemption at par*

| | | |
|---|---|---|
| (a) | Bank A/c | Dr. |
| | To Debenture Application & Allotment A/c | |
| | (Receipt of application money) | |
| (b) | Debenture Application & Allotment A/c | Dr. |
| | To Debentures A/c | |
| | To Securities Premium Reserve A/c | |
| | (Allotment of debentures at a premium) | |

4. *Issue at par and redeemable at premium*

| | | |
|---|---|---|
| (a) | Bank A/c | Dr. |
| | To Debenture Application & Allotment A/c | |
| | (Receipt of application money) | |
| (b) | Debenture Application & Allotment A/c | Dr. |
| | Loss on Issue of Debentures A/c | Dr. (with premium on redemption) |
| | To Debentures A/c | (with nominal value of debenture) |
| | To Premium on Redemption of Debenture A/c | (with premium on redemption) |
| | (Allotment of debentures at par and redeemade at a premium) | |

5. *Issue at discount and redemption at premium*

| | |
|---|---|
| Bank A/c | Dr. |
| To Debenture Application & Allotment A/c | |
| (Receipt of application money) | |
| Debenture Application & Allotment A/c | Dr. |
| Loss on Issue of Debentures A/c | Dr. (with discount on issue plus premium on redemption) |
| To Debentures A/c | (with nominal value of debenture) |
| To Premium on Redemption of Debentures A/c | (with premium on redemption) |
| (Allotment of debentures at a discount and redeemable at premium) | |

6. *Issued at a premium and redeemable at premium*

| | |
|---|---|
| Bank A/c | Dr. |
| To Debenture Application & Allotment A/c | |
| (Receipt of application money) | |
| Debenture Application & Allotment A/c | Dr. |
| Loss on Issue of Debentures A/c | Dr. (with premium on redemption) |
| To Debentures A/c | (with nominal value of debenture) |
| To Securities Premium Reserve A/c | (with premium on issue) |
| To Premium on Redemption of Debentures A/c | (with premium on redemption) |

*Notes:*

1. When debentures are redeemable at a premium, a provision has to be made right at the time of the issue by debiting the amount to 'Loss on Issue of Debentures A/c'. It may be noted that when debentures are issued at a discount and are redeemable at a premium, the amount of discount on issue is also debited to 'Loss on Issue of Debentures'. It may be noted that when the debentures are issued at a discount and are redeemable at par, the amount debited to 'Discount on Issue of Debentures A/c' as usual.
2. Premium on redemption is a liability of a company payable in future. It is a provision and is shown under the head Non-current liabilities under sub-head 'Long-term Borrowings' until debentures are redeemed.
3. Loss on issue of debentures is a capital loss and it is to be written-off gradually charged to statement of profit and loss or securities premium account.

### *Illustration 15*

Give Journal entries for the following:

1. Issue of Rs 1,00,000, 9% debentures of Rs 100 each at par and redeemable at par.

2. Issue of Rs 1,00,000, 9% debentures of Rs 100 each at premium of 5% but redeemable at par.
3. Issue of Rs 1,00,000, 9% debentures of Rs 100 each at discount of 5% repayable at par.
4. Issue of Rs 1,00,000, 9% debentures of Rs 100 each at par but repayable at a premium of 5%.
5. Issue of Rs 1,00,000, 9% debentures of Rs 100 each at discount of 5% but redeemable at premium of 5%.
6. Issue of Rs 1,00,000, 9% debentures of Rs 100 each at premium of 5% and redeemable at premium of 5%.

***Solution:***

**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| 1 | Bank A/c Dr.<br>To 9% Debenture Application & Allotment A/c<br>(Debentures Application money received) | | 1,00,000 | <br>1,00,000 |
| | Debenture Application & Allotment A/c Dr.<br>To 9% Debentures A/c<br>(Application money transferred to Debentures Account) | | 1,00,000 | <br>1,00,000 |
| 2 | Bank A/c Dr.<br>To 9% Debenture Application & Allotment A/c<br>(Debentures application money received) | | 1,05,000 | <br>1,05,000 |
| | Debenture Application & Allotment A/c Dr.<br>To 9% Debentures A/c<br>To Securities Premium Reserve A/c<br>(Debentures application money transferred to Debentures & Securities Premium account) | | 1,05,000 | <br>1,00,000<br>5,000 |
| 3 | Bank A/c Dr.<br>To 9% Debenture Application & Allotment A/c<br>(Debentures application money received) | | 95,000 | <br>95,000 |
| | 9% Debenture Application & Allotment A/c Dr.<br>Discount on Issue of Debentures A/c Dr.<br>To 9% Debentures A/c<br>(Debentures application money transferred to Debentures account) | | 95,000<br>5,000 | <br><br>1,00,000 |

| | | | | |
|---|---|---|---|---|
| 4 | Bank A/c Dr. | | 1,00,000 | |
| | To 9% Debenture Application & Allotment A/c | | | 1,00,000 |
| | (Debentures Application money received) | | | |
| | Debenture Application & Allotment A/c Dr. | | 1,00,000 | |
| | Loss on Issue of Debentures A/c Dr. | | 5,000 | |
| | To 9% Debentures A/c | | | 1,00,000 |
| | To Premium on Redemption of Debentures A/c | | | 5,000 |
| | (Debentures Application money transferred to Debentures account) | | | |
| 5 | Bank A/c Dr. | | 95,000 | |
| | To 9% Debenture Application & Allotment A/c | | | 95,000 |
| | (Debentures Application money received) | | | |
| | Debenture Application & Allotment A/c Dr. | | 95,000 | |
| | Loss on Issue of Debentures A/c Dr. | | 10,000 | |
| | To 9% Debentures A/c | | | 1,00,000 |
| | To Premium on Redemption of Debentures A/c | | | 5,000 |
| | (Debentures application money transferred to debentures and Premium on debenture account) | | | |
| 6 | Bank A/c Dr. | | 1,05,000 | |
| | To 9% Debenture Application & Allotment A/c | | | 1,05,000 |
| | (Debentures Application money received) | | | |
| | Debenture Application & Allotment A/c Dr. | | 1,05,000 | |
| | Loss on Issue of Debentures A/c Dr. | | 5,000 | |
| | To 9% Debenture A/c | | | 1,00,000 |
| | To Premium on Redemption of Debentures A/c | | | 5,000 |
| | To Securities Premium Reserve A/c | | | 5,000 |
| | (Debenture application money transferred to debentures account) | | | |

***Illustration 16***

You are required to pass the journal entries relating to the issue of the debentures in the books of X Ltd., and show how they would appear in its balance sheet under the following cases:

(a) 120, 8% debentures of Rs 1,000 each are issued at 5% discount and repayable at par.

(b) 150, 7% debentures of Rs 1,000 each are issued at 5% discount and repayable at premium of 10%.

(c) 80, 9% debentures of Rs 1,000 each are issued at 5% premium.

(d) Another 400, 8% debentures of Rs 100 each are issued as collateral security against a loan of Rs 40,000.

***Solution:***

**Books of X Ltd.**

(a) **Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Bank A/c Dr.<br>To Debenture Application and Allotment A/c<br>(Debenture application money received) | | 1,14,000 | 1,14,000 |
| | Debenture Application and Allotment A/c Dr.<br>Discount on Issue of Debentures A/c Dr.<br>To 8% Debentures A/c<br>(Debentures application money transferred to Debentures A/c) | | 1,14,000<br>6,000 | 1,20,000 |

**Books of X Ltd.**

**Balance Sheet as at___________**

| Particulars | Note No. | Amount (Rs) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| Long-term borrowings | 1 | 1,20,000 |
| | | **1,20,000** |
| **II. Assets** | | |
| 1. Non-current assets | | |
| Other non-current assets | 2 | 4,800 |
| 2. Current assets | | |
| Cash and cash equivalents | 3 | 1,14,000 |
| Other current assets | 4 | 1,200 |
| | | **1,20,000** |

Notes to Accounts

| Particulars | Amount (Rs) |
|---|---|
| 1. Long-term borrowings | |
| 120, 8% debentures of Rs 1,000 each | **1,20,000** |
| 2. Other non-current assets | |
| Discount on issue of debentures | **4,800** |
| 3. Cash and cash equivalents | |
| Cash at bank | **1,14,000** |
| 4. Other current assets | |
| Discount on issue of debentures | **1,200** |

Note: Discount on Issue of Debentures is written-off in 5 years, presuming that debentures are redeemable after 5 years.

**Books of X Ltd.**

(b) **Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Bank A/c Dr.<br>To Debenture Application and Allotment A/c<br>(Debenture application money received) | | 1,42,500 | <br><br>1,42,500 |
| | Debenture Application and Allotment A/c Dr.<br>Loss on Issue of Debentures A/c Dr.<br>To 8% Debentures A/c<br>To Premium on Redemption of Debenture A/c<br>(Debentures application money transferred to Debentures A/c) | | 1,42,500<br>22,500 | <br><br>1,50,000<br>15,000 |

**Books of X Ltd.**

**Balance Sheet as at________________**

| Particulars | Note No. | Amount (Rs) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Non-current Liabilities | | |
| a) Long-term borrowings | 1 | 1,50,000 |
| b) Other long-term liabilities | 2 | 15,000 |
| | | **1,65,000** |
| **II. Assets** | | |
| 1. Non-current assets | | |
| Other non-current assets | 3 | 18,000 |
| 2. Current assets | | |
| a) Cash and cash equivalents | 4 | 1,42,500 |
| b) Other current assets | 5 | 4,500 |
| | | **1,65,000** |

Notes to Accounts

| Particulars | Amount (Rs) |
|---|---|
| 1. Long-term borrowings | |
| 150, 7% debentures of Rs 1,000 each | **1,50,000** |
| 2. Other long-term liabilities | |
| Premium on redemption of debentures | **15,000** |
| 3. Other non-current assets | |
| Loss on issue of debentures | **18,000** |
| 4. Cash and cash equivalents | |
| Cash at bank | **1,42,500** |
| 5. Other current assets | |
| Loss on issue of debentures | **4,500** |

Note: Discount on Issue of Debentures is written-off in 5 years, presuming that debentures are redeemable after 5 years.

**Books of X Ltd.**

(c) **Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 84,000 | |
| | To Debenture Application and Allotment A/c | | | 84,000 |
| | (Debenture application money received) | | | |
| | Debenture Application and Allotment A/c Dr. | | 84,000 | |
| | To 9% Debentures A/c | | | 80,000 |
| | To Securities Premium Reserve A/c | | | 4,000 |
| | (Debentures application money transferred to Debentures A/c and securities premium reserve A/c) | | | |

**X Ltd.**
**Balance Sheet as at ..............**

| Particulars | Note No. | Amount (Rs) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholder's funds | | |
| Reserves and surplus | 1 | 4,000 |
| 2. Non-current Liabilities | | |
| Long-term borrowings | 2 | 80,000 |
| | | **84,000** |
| **II. Assets** | | |
| 1. Current assets | | |
| Cash and cash equivalents | 3 | 84,000 |
| | | **84,000** |

Notes to Accounts

| Particulars | Amount (Rs) |
|---|---|
| 1. Reserves and surplus | |
| Securities premium reserve | **4,000** |
| 2. Long-term borrowings | |
| 80, 9% debentures of Rs 1,000 each | **80,000** |

**Books of X Ltd.**

(d) **Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Debenture Suspense A/c Dr. | | 40,000 | |
| | To 8% Debentures A/c | | | 40,000 |
| | (Issue of 400, 8% debentures of Rs 100 each as collateral security against a loan of Rs 40,000) | | | |

**X Ltd.**

**Balance Sheet as at ____________ (Extract)**

| Particulars | Note No. | Amount (Rs) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Long-term borrowings | 1 | **40,000** |

Notes to Accounts

| Particulars | Amount (Rs) | Amount (Rs) |
|---|---|---|
| 1. Long-term borrowings | | |
| Bank loan | | 40,000 |
| 400, 8% debentures of Rs 100 each | 40,000 | |
| Less: Debentures suspense | 40,000 | - |
| | | **40,000** |

**Do it Yourself**

1. Nena Limited issued 50,000, 10% debentures of Rs 100 each on the basis of the following conditions:
   a. Debentures issued at par and redeemable at par.
   b. Debentures issued at discount @ 5% and redeemable at par.
   c. Debentures issued at premium @ 10% and redeemable at par.
   d. Debentures issued at par and redeemable at premium @ 10%.
   e. Debentures issued at discount of 5% and redeemable at a premium of 10%.
   f. Debentures issued at premium of 6% and redeemable at a premium of 4%.

   Record necessary journal entries in the above mentioned cases at the time of issue and redemption of debentures.
2. Record necessary journal entries in each of the following cases:
   a. 27,000, 7% debentures of Rs 100 each issued at par, redeemable at par.
   b. 25,000, 7% debentures of Rs 100 each issued at par redeemable at 4% premium.
   c. 20,000, 7% debentures of Rs 100 each issued at 5% discount and redeemable at par.
   d. 30,000, 7% debentures of Rs 100 each issued at 5% discount and redeemable at 2½ % premium.
   e. 35,000, 7% debentures of Rs 100 each issued at 4% premium and redeemable at premium of 5%.

## 2.9 Interest on Debentures

When a company issues debentures, it is under an obligation to pay interest thereon at fixed percentage (half yearly) periodically until debentures are repaid. This percentage is usually as part of the name of debentures like 8% debentures, 10% debentures, etc., and interest payable is calculated at the nominal value of debentures.

Interest on debenture is a charge against the profit of the company and must be paid whether the company has earned any profit or not. According to Income Tax Act, 1961, a company must deduct income tax at a prescribed rate from the interest payable on debentures if it exceeds the prescribed limit. It is called Tax Deducted at Source (TDS) and is to be deposited with the tax authorities. Of course, the debentureholders can adjust this amount against the tax due from them.

### *2.9.1 Accounting Treatment*

The following journal entries are recorded in the books of a company in connection with the interest on debentures:

1. *When interest is due*
   Debenture Interest A/c Dr.
   To Income Tax payable A/c
   To Debentureholders A/c
   (Amount of interest due on debenture and tax deducted at source )

2. *For payment of interest to debentureholders*
   Debentureholders A/c Dr.
   To Bank A/c
   (Amount of interest paid to debentureholders)

3. *On transfer debenture Interest Account to statement of Profit and Loss*
   Statement of Profit and Loss Dr.
   To Debenture Interest A/c
   (Debenture interest transferred to profit and loss A/c)

4. *On payment of tax deducted at source to the Government*
   Income Tax Payable A/c Dr.
   To Bank A/c
   (Payment of tax deducted at source on interest on debentures)

### *Illustration 17*

A Ltd., issued 2,000, 10% debentures of Rs 100 each on April 01, 2016 at a discount of 10% redeemable at a premium of 10%.

Give journal entries relating to the issue of debentures and debenture interest for the period ending March 31, 2017 assuming that interest was paid half yearly on September 30 and March 31 and tax deducted at source is 10%.

**Solution:**

**Book of A Ltd.**

**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| 2016 Apr. 01 | Bank A/c Dr.<br>To 10% Debenture Application & Allotment A/c<br>(Application money received on 2,000, 10% debentures) | | 1,80,000 | <br>1,80,000 |
| Apr. 01 | 10% Debentures Application & Allotment A/c Dr.<br>Loss on Issue of Debenture A/c Dr.<br>To 10% Debentures A/c<br>To Premium on Redemption of Debentures A/c<br>(Allotment of debentures at a discount of 10% and redeemable at a premium of 10%) | | 1,80,000<br>40,000 | <br><br>2,00,000<br>20,000 |
| Sept.30 | Debenture Interest A/c Dr.<br>To Debentureholders A/c<br>To Income Tax Payable A/c<br>(Interest due for 6 months and tax deducted at source) | | 10,000 | <br>9,000<br>1,000 |
| | Income Tax payable A/c Dr.<br>Bank A/c<br>(Tax deducted at source paid to the government) | | 1,000 | <br>1000 |
| 2017 Sept. | Debentureholders A/c Dr.<br>To Bank A/c<br>(Payment of interest) | | 9,000 | <br>9,000 |
| March 31 | Debenture interest A/c Dr.<br>To Debentureholders A/c<br>To Income Tax Payable A/c<br>(Interest due for 6 months and tax deducted at source) | | 10,000 | <br>9,000<br>1,000 |
| March 31 | Debenturesholders A/c Dr.<br>To Bank A/c<br>(Payment of interest) | | 9,000 | <br>9,000 |
| March 31 | Income Tax Payable A/c Dr.<br>To Bank A/c<br>(Paid tax deducted at source to the government) | | 1,000 | <br>1,000 |
| March 31 | Statement of Profit and Loss Dr.<br>To Debenture Interest A/c<br>(Debenture interest transferred to profit and loss account) | | 20,000 | <br>20,000 |

**Do it Yourself**

1. Diwakar enterprises Ltd. Issued 10,00,000, 6% debentures on April 1, 2016. Interest is paid on September 30, 2016 and March 31, 2017.

   Record necessary journal entries assuming that income tax is deducted @10% of the amount of interest.
2. Laser India Ltd. Issued 7,00,000, 8% debentures of Rs 100 each at par. Interest is to be paid on these debentures half-yearly on September 30 and March 31, every year. Record necessary journal entries asuming that income tax is deducted @ 10% of the amount of interest.

## 2.10 Writing-off Discount/Loss on Issue of Debentures

The discount/loss on issue of debentures is a capital loss or a fictitious asset and, therefore, must be written-off during the life time of debentures. The amount of discount/loss on issue of debentures should normally not be written-off in the year of issue itself since the benefit of the debentures would accrue to the company till their redemption. The discount/loss on it is, therefore, treated as capital loss. The discount may be charged to Securities Premium A/c or may be written-off over 3 to 5 years through statement of profit and loss as per guidelines issued by ICAI. In case, however, there are no capital profits or if the capital profits are not adequate, the amount of such discount/loss can be written-off against the revenue profits every year by passing the following journal entry.

Statement of Profit and Loss Dr.
To Discount/Loss on Issue of Debentures A/c
(Discount/loss on issue of debentures written-off)

There are two methods, which can be adopted to write off discount/loss on issue of debentures against the revenue profits. These are as follows.

1. *Fixed Instalment Method:* When the debentures are redeemed at the end of a specified period, the total amount of discount should be written off in equal instalments of fixed amount over that period. For example, if the debentures are to be redeemed after 10 years then out of the total amount of discount of Rs. 1,00,000, Rs. 10,000 will be written-off every year.
2. *Fluctuating Instalment Method:* When debentures are repaid by annual drawings or in instalments, the discount should be written-off in the ratio of debentures outstanding as at the end of each accounting year. The amount of discount, under this method, goes on reducing year. The amount of discount, under this method, goes on reducing every year and so this method may also be known as Reducing Instalment Method.

For example, a company issues Rs. 15,00,000, 9% debentures at a discount of 10% redeemable by annual drawings of Rs. 3,00,000 at the end of each year. The amount of discount to be written-off will be calculated as under:

| Year | Amount utilised during the Year | Ratio |
|---|---|---|
| First Year | Rs. 15,00,000 | 5 |
| Second Year | Rs. 12,00,000 | 4 |
| Third Year | Rs. 9,00,000 | 3 |
| Fourth Year | Rs. 6,00,000 | 2 |
| Fifth Year | Rs. 3,00,000 | 1 |

Hence, the amount of discount to be written-off every year will be as under :

| | | | |
|---|---|---|---|
| First Year | Rs. 1,50,000 5/15 | = | Rs. 50,000 |
| Second Year | Rs. 1,50,000 4/15 | = | Rs. 40,000 |
| Third Year | Rs. 1,50,000 3/15 | = | Rs. 30,000 |
| Fourth Year | Rs. 1,50,000 2/15 | = | Rs. 20,000 |
| Fifth Year | Rs. 1,50,000 1/15 | = | Rs. 10,000 |

**Do it Yourself**

1. X Ltd. issued 2,000, 10% debentures of Rs 100 each at a discount of 8% on April, 2014 which are redeemable at par by annual drawings in 4 years commencing from March 31, 2015 as per the following redemption plan:

   Ist Draw 10%, 2nd Draw 20%, 3rd Draw 30%, and 4th Draw 40%. Calculate the amount of discount to be written-off each year assuming that X Ltd., follows calendar year as its accounting year.

2. Z Ltd. issued 15,00,000, 10% debentures of Rs 50 each at premium of 10% payable as Rs 20 on application and balance on allotment. Debentures are redeemable at par after 6 years All the money due on allotment was called and duly received. Record necessary entries when premium money is included:

   (i) in application money

   (ii) in allotment money

3. Z Ltd. issued 5,000, 10% debentures of Rs 100 each at a discount of 10% on 1.4.2014. The debentures are to be redeemed every year by draw of lots – 1,000 debentures to be redeemed every year starting on 31.03.2015. Record the necessary journal entries including the payment of interest and writing off the discount on issue of debentures. The interest is payable on September 30 and March 31. Z Ltd. closes its books of accounts on March 31 every year.

4. M Ltd. issued 10,000, 8% debentures of Rs 100 each at a premium of 10% on 1.1.2016. It purchased sundry assets of the value of Rs,2,50,000 and took over the liabilities of Rs,60,000 and issued 8% debentures at a discount of 5% to the vendor. On the same date, it took loan from the Bank for Rs 1,00,000 and issued 8% debentures as Collateral Security. Record the relevant journal entries in the books of M Ltd. and prepare the extract of balance sheet on 31.03.2017. Ignore interest.

5. On 1.4.2016, Fast Computers Ltd. issued 20,00,000, 6% debentures of Rs 100 each at a discount of 4%, redeemable at a premium of 5% after three years. The amount was payable as follows:

   On application Rs 50 per debenture,

   Balance on allotment.

Record the necessary journal entries for issue of debentures.

6. D Ltd. purchased machinery worth Rs 2,00,000 from E Ltd. on 1.4.2016. Rs 50,000 were paid immediately and the balance was paid by issue of Rs 1,60,000, 12% Debentures in D Ltd. Record the necessary journal entries for recording the transactions in the books of D Ltd.

### Illustration 18

A Ltd. Company has issued Rs 1,00,000, 9% debentures at a discount of 6%. These debentures are to be redeemed equally, spread over 5 annual instalments. Show Discount on issue of debentures account for five years

**Solution:**

**Books of A Ltd.**
**Discount on Issue of Debentures Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *Amount (Rs)* | *Date* | *Particulars* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Ist year | Debenture | 6,000 | Ist year | Statement of Profit & Loss | 2,000 |
| | | | | Balance c/d | 4,000 |
| | | **6,000** | | | **6,000** |
| IInd year | Balance b/d | 4,000 | IInd year | Statement of Profit & Loss | 1,600 |
| | | | | Balance c/d | 2,400 |
| | | **4,000** | | | **4,000** |
| IIIrd year | Balance b/d | 2,400 | IIIrd year | Statement of Profit & Loss | 1,200 |
| | | | | Balance c/d | 1,200 |
| | | **2,400** | | | **2,400** |
| IVth year | Balance b/d | 1,200 | IVth year | Statement of Profit & Loss | 800 |
| | | | | Balance c/d | 400 |
| | | **1,200** | | | **1,200** |
| Vth year | Balance b/d | 400 | Vth year | Statement of Profit & Loss | 400 |
| | | **400** | | | **400** |

*Workings Notes:*

Total discount on the issue of debentures = $1,00,000 \times \frac{6}{100} = \text{Rs } 6,000$

Amount of discount to be written-off is determined as follows:

| Year | Amount (Rs.) | Ratio | Amount (Rs) |
|---|---|---|---|
| 1 | 1,00,000 | 5 | $\frac{5}{15} \times 6{,}000 =$ 2,000 |
| 2 | 80,000 | 4 | $\frac{4}{15} \times 6{,}000 =$ 1,600 |
| 3 | 60,000 | 3 | $\frac{3}{15} \times 6{,}000 =$ 1,200 |
| 4 | 40,000 | 2 | $\frac{2}{15} \times 6{,}000 =$ 800 |
| 5 | 20,000 | 1 | $\frac{1}{15} \times 6{,}000 =$ 400 |
| | | 15 | |

**Test your Understanding-I**

**State whether the following statements are True (T) or False (F):**

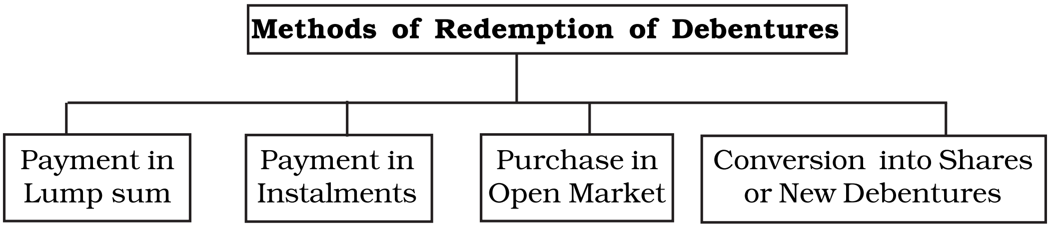
1. Debenture is a part of owned capital.
2. The payment of interest on debentures is a charge on the profits of the company.
3. The debentures cannot be issued at a discount of more than 10% of the face value.
4. Redeemable debentures are those debentures, which are payable on the expiry of the specific period.
5. Perpetual debentures are also known as irredeemable debentures.
6. Debentures cannot be converted into shares.
7. Debentures cannot be issued at a premium.
8. A collateral security is a subsidiary security.
9. Debentures cannot be issued at a premium and redeemable at par.
10. Loss on issue of debentures account is a revenue loss.
11. Premium on redemption of debentures account is shown under the 'Securities Premium' in the balance sheet.

## SECTION II

### 2.11 Redemption of Debentures

Redemption of debentures refers to extinguishing or discharging the liability on account of debentures in accordance with the terms of issue. In other words redemption of debentures means repayment of the amount of debentures by the company. There are four ways by which the debentures can be redeemed. These are :

1. Payment in lump sum
2. Payment in instalments
3. Purchase in the open market
4. By conversion into shares or new debentures.




*Payment in lump sum :* The company redeems the debentures by paying the amount in lump sum to the debentureholders at the maturity thereof as per terms of issue.

*Payment in instalments* **:** Under this method, normally redemption of debentures is made in instalments on the specified date during the tenure of the debentures. The total amount of debenture liability is divided by the number of years. It is to note that the actual debentures redeemable are identified by means of drawing the requisite number of lots out of the debentures outstanding for payment.

*Purchase in open market:* When a company purchases its own debentures for the purposes of cancellation, such an act of purchasing and cancelling the debentures constitutes redemption of debentures by purchase in the open market.

*Conversion into shares or new debentures :* A company can redeem its debentures by converting them into shares or new class of debentures. If debentureholders find that the offer is beneficial to them, they can exercise their right of converting their debentures into shares or new class of debentures. These new shares or debentures can be issued at par, at a discount or at a premium. It should be noted that only the actual proceeds of debentures are to be taken into account for ascertaining the number of shares to be issued in lieu of the debentures to be converted. If debentures were originally issued at discount, the actual amount realised from them at the time of issue would be used as the basis for computing the actual number of shares to be issued. It may be noted that this method is applicable only to convertible debentures.

The following factors should be taken into consideration by the company at the time of redemption of debentures :

1. **Time of redemption of debentures :-** Generally, debentures are redeemed on due date but a company may redeem its debentures before maturity date, if its articles provides for such.
2. **Sources of Redemption of debentures :-** A company may source its redemption of debentures either out of capital or out of profits.

a. *Out of Capital :-* Only those companies which are exempted from creating DRR may redeem debentures out of Capital.

b. *Out of Profits :-* When any company planning to redeem its debentures purely out of profit, it should transfer 100 percent of the face value of the redeemable debentures to DRR out of the surplus available for payment of dividend.

c. *Out of Capital and Profits :-* In case, Company is planning to redeem its debentures by using both the sources partially, it does not transfer 100 percent of face value of outstanding debentures of a particular class to DRR out of the surplus available for payment of dividend.

## 2.12 Redemption by Payment in Lump Sum

When the company pays the whole amount in lump sum, the following journal entries are recorded in the books of the company:

1. *If debentures are to be redeemed at par*

| | | |
|---|---|---|
| (a) | Debentures A/c | Dr. |
| | To Debentureholders | |
| (b) | Debentureholders | Dr. |
| | To Bank A/c | |

2. *If debentures are to be redeemed at premium*

| | | |
|---|---|---|
| (a) | Debentures A/c | Dr. |
| | Premium on Redemption of Debentures A/c | Dr. |
| | To Debentureholders | |
| (b) | Debentureholders | Dr. |
| | To Bank A/c | |

***Illustration 19***

Give the necessary journal entries at the time of redemption of debentures in each of the following cases.

1. X Ltd. issued 5,000, 9% debentures of Rs 100 each at par and redeemable at par at the end of 5 years out of capital.
2. X Ltd. issued 1,000, 12% debentures of Rs 100 each at par. These debentures are redeemable at 10% premium at the end of 4 years
3. X Ltd. issued 12% debentures of the total face value of Rs 1,00,000 at premium of 5% to be redeemed at par at the end of 4 years
4. X Ltd. issued Rs 1,00,000, 12% debentures at a discount of 5% but redeemable at a premium of 5% at the end of 5 years

***Solution:***

**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|---|
| 1. | 9% Debentures A/c | Dr. | | 5,00,000 | |
| | To Debentureholders A/c | | | | 5,00,000 |
| | (Amount due on redemption debentures) | | | | |
| | Debentureholders A/c | Dr. | | 5,00,000 | |
| | To Bank A/c | | | | 5,00,000 |
| | (Payment made to debentureholders) | | | | |
| 2. | 12% Debentures A/c | Dr. | | 1,00,000 | |
| | Premium on Redemption of Debentures A/c | Dr. | | 10,000 | |
| | To Debentureholders | | | | 1,10,000 |
| | (Amount due on redemption of debentures) | | | | |
| | Debentureholders A/c | Dr. | | 1,10,000 | |
| | To Bank A/c | | | | 1,10,000 |
| | (Payment made to debentureholders) | | | | |
| 3. | 12% Debentures A/c | Dr. | | 1,00,000 | |
| | To Debentureholders A/c | | | | 1,00,000 |
| | (Amount due on redemption) | | | | |

| | | | | |
|---|---|---|---|---|
| | Debentureholders A/c Dr.<br>To Bank A/c<br>(Payment made to debentureholders) | | 1,00,000 | <br>1,00,000 |
| 4. | 12% Debentures A/c Dr.<br>Premium on Redemption of Debentures A/c Dr.<br>To Debentureholders A/c<br>(Amount due on redemption of debentures) | | 1,00,000<br>5,000 | <br><br>1,05,000 |
| | Debentureholders A/c Dr.<br>To Bank A/c<br>(Payment made to debentureholders) | | 1,05,000 | <br>1,05,000 |

As per the provisions of the Companies Act, 2013, the company must set aside a portion of profits every year and transfer it to Debenture Redemption Reserve for redemption of debentures until the debentures are redeemed. The journal entry recorded for the purpose is as follows :

(a) Where a company has issued debentures, it shall create a Debenture Redemption Reserve for the redemption of such debentures, to which adequate amount shall be credited, from out of its profit every year until such debentures are redeemed.

(b) The amount credited to the Debenture Redemption Reserve shall not be utilised by the company except for the purpose of redemption of debentures.

According to Rule 18(7) of COMPANIES (SHARE CAPITAL AND DEBENTURES) RULES, 2014, the company shall create a Debenture Redemption Reserve for the purpose of redemption of debentures, in accordance with the conditions given below:

(a) The Debenture Redemption Reserve shall be create out of the profits of the company available for payment of dividend;

(b) The company shall create Debenture Redemption Reserve (DRR) in accordance with following conditions:

i. No DRR is required for debentures issued by All India Financial Institutions (AIFIs) regulated by Reserve Bank of India and Banking Companies for both public as well as privately placed debentures.

ii. For NBFCs registered with the RBI and for Housing Finance Companies registered with the National Housing Bank, DRR will be 25% of the value of outstanding debentures issued through public issue as per present SEBI (Issue and Listing of Debt Securities) Regulations, 2008, and no DRR is required in the case of privately placed debentures.

iii. For other companies including manufacturing and infrastructure companies, the adequacy of DRR will be 25% of the value of outstanding debentures issued through public issue as per present SEBI (Issue and Listing of Debt Securities) Regulations, 2008.

iv. 25% DRR is required in the case of privately placed debentures by listed companies. For unlisted companies issuing debentures on private placement basis, the DRR will be 25% of the value of outstanding debentures.

(c) Every company required to create Debenture Redemption Reserve shall on or before the $30^{th}$ day of April in each year, invest or deposit, as the case may be, a sum which shall not be less than fifteen per cent, of the amount of its debentures maturing during the year ending on the $31^{st}$ day of March of the next year, in any one or more of the following methods, namely :-

i. Deposits with any scheduled bank, free from any charge or lien;

ii. Securities of the Central Government or of any State Government;

iii. Securities mentioned in sub-clauses (a) to (d) and (ee) of section 20 of the Indian Trusts Act, 1882;

iv. Bonds issued by any other company which is notified under sub-clause (f) of section 20 of the Indian Trusts Act, 1882;

v. The amount invested or deposited as above shall not be used for any purpose other than for redemption of debentures maturing during the year referred above:

(d) In case of partly convertible debentures, Debenture Redemption Reserve shall be created in respect of non-convertible portion of debenture issue.

(e) The amount credited to the Debenture Redemption Reserve shall not be utilised by the company except for the purpose of redemption of debentures.

***Illustration 20***

XYZ Ltd. issued 200, 15% debentures of Rs 100 each on April 01, 2013 at discount of 10% redeemable at premium of 10% out of profits. Give journal entries at the time of issue and redemption of debentures if debentures are to be redeemed in lump sum at the end of 4th year. The directors decided to transfer the minimum amount to Debenture Redemption Reserve on March 31, 2016.

**Solution:**

**Books of XYZ Ltd.**
**Journal**

| Date | Particulars | | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|---|
| 2013 April 01 | Bank A/c<br>To Debenture Application and Allotment A/c<br>(Application money received on debentures) | Dr. | | 18,000 | 18,000 |
| April 01 | Debenture Application and Allotment A/c<br>Loss on Issue of Debentures A/c<br>To 15% Debentures A/c<br>To Premium on Redemption of Debentures A/c<br>(Issue of Debentures at 10% discount an redeemable at 10% premium) | Dr.<br>Dr. | | 18,000<br>4,000 | 20,000<br>2,000 |
| 2016 March 31 | Balance in Statement of Profit and loss<br>To Debenture Redemption Reserve A/c<br>(Transfer of profits to DRR) | Dr. | | 5,000 | 5,000 |
| April 30 | Debenture Redemption Investment A/c<br>To Bank A/c<br>(Required amount invested in DRI) | Dr. | | 3,000 | 3,000 |
| 2017 March 31 | Bank A/c<br>To Debenture Redemption Investment<br>(DRI encashed at the time of redemption of debentures) | Dr. | | 3,000 | 3,000 |
| March 31 | 15% Debentures A/c<br>Premium on Redemption of Debentures A/c<br>To Debentureholders A/c<br>(Amount due on redemption) | Dr.<br>Dr. | | 20,000<br>2,000 | 22,000 |
| March 31 | Debentureholders A/c<br>To Bank A/c<br>(Amount paid to debentureholders) | Dr. | | 22,000 | 22,000 |
| March 31 | Debenture Redemption Reserve A/c<br>To General Reserve<br>(Transfer of DRR to General Reserve After redemption of debentures) | Dr. | | 5,000 | 5,000 |

### *2.12.2 Redemption by Payment in Instalments*

When, as per terms of the issue, the debentures are to be redeemed in instalments beginning from a particular year, the actual debentures to be redeemed are selected usually by draw of lots, and the redemption to be made either out of profits or out of capital. The entries will be:

1. *If redeemed out of profits*
   - (a) Statement of profit and loss Dr.
     To Debenture Redemption Reserve A/c
   - (b) Debentures A/c Dr.
     To Debentureholders
   - (c) Debentureholders Dr.
     To Bank A/c
2. *If redeemed out of capital*
   - (a) Debentures A/c Dr.
     To Debentureholders
   - (b) Debentureholders Dr.
     To Bank A/c

**Illustration 21**

ABC Ltd. issued 3,000, 14% Debentures of Rs 100 each at a discount of 5% on April 1, 2012. Interest on these debentures is payable annually on March 31 each year. The debentures are redeemable at par in three equal instalments at the end of the third, fourth and fifth year. Prepare 14% Debentures Account, Discount on Issue of Debentures Account and Debenture Interest Account in the books of the company.

**Solution:**

**14% Debentures Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2013 Mar.31 | Balance c/d | | 3,00,000 | 2012 Apr.01 | Debenture Application | | 2,85,000 |
| | | | | | Discount on Issue of Debentures | | 15,000 |
| | | | **3,00,000** | | | | **3,00,000** |

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2014 Mar.31 | Balance c/d | | 3,00,000 | 2013 Apr.01 | Balance b/d | | 3,00,000 |
| | | | **3,00,000** | | | | **3,00,000** |
| 2015 Mar.31 | Bank A/c | | 1,00,000 | 2014 Apr.01 | Balance b/d | | 3,00,000 |
| Mar.31 | Balance c/d | | 2,00,000 | | | | |
| | | | **3,00,000** | | | | **3,00,000** |
| 2016 Mar.31 | Bank A/c | | 1,00,000 | 2015 Apr.01 | Balance b/d | | 2,00,000 |
| Mar.31 | Balance c/d | | 1,00,000 | | | | |
| | | | **2,00,000** | | | | **2,00,000** |
| 2017 Mar.31 | Balance c/d | | 1,00,000 | 2016 Apr.01 | Balance b/d | | 1,00,000 |
| | | | **1,00,000** | | | | **1,00,000** |

## Debentures Interest Account

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2013 Mar.31 | Bank | | **42,000** | 2013 Mar.31 | Statement of Profit and Loss | | **42,000** |
| 2014 Mar.31 | Bank | | **42,000** | 2014 Mar.31 | Statement of Profit and Loss | | **42,000** |
| 2015 Mar.31 | Bank | | **42,000** | 2015 Mar.31 | Statement of Profit and Loss | | **42,000** |
| 2016 Mar.31 | Bank | | **28,000** | 2016 Mar.31 | Statement of Profit and Loss | | **28,000** |
| 2017 Mar.31 | Bank | | **14,000** | 2017 Mar. 31 | Statement of Profit and Loss | | **14,000** |

## Discount on Issue Debentures Account

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2012 Apr.01 | To 14% debentures A/c | | 15,000 | 2013 Mar.31 | Statement of Profit and Loss | | 3,750 |
| | | | | Mar.31 | Balance c/d | | 11,250 |
| | | | **15,000** | | | | **15,000** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 2013 Apr.01 | Balance b/d | | 11,250 | 2014 Mar. 31 Mar. 31 | Statement of Profit and Loss Balance c/d | | 3,750 7,500 |
| | | | **11,250** | | | | **11,250** |
| 2014 Apr.01 | Balance b/d | | 7,500 | 2015 Mar. 31 Mar. 31 | Statement of Profit and Loss Balance c/d | | 3,750 3,750 |
| | | | **7,500** | | | | **7,500** |
| 2015 Apr.01 | Balance b/d | | 3,750 | 2016 Mar. 31 Mar. 31 | Statement of Profit and Loss Balance c/d | | 2,500 1,250 |
| | | | **3,750** | | | | **3,750** |
| 2016 Apr.01 | Balance b/d | | 1,250 | 2017 Mar. 31 | Statement of Profit and Loss | | 1,250 |
| | | | **1,250** | | | | **1,250** |

*Working Notes:*

1. Debenture interest is calculated @ 14% on the amount of debentures outstanding in the beginning of each year. The amount of debentures outstanding on April 1, each year is:

| | **Debenture Outstanding Rs** |
|---|---|
| April 2012 | 3,00,000 |
| April 2013 | 3,00,000 |
| April 2014 | 3,00,000 |
| April 2015 | 2,00,000 |
| April 2016 | 1,00,000 |

2. Discount on Issue of Debentures is written-off in the ratio of the amount of debentures outstanding in the beginning of each year. The ratio is 3:3:3:2:1. So amount of discount to be written-off will be

| ***Year*** | ***Rs*** | ***Amount Rs*** |
|---|---|---|
| 2012 | Rs 15,000 $\times \frac{3}{12}$ | 3,750 |
| 2013 | Rs 15,000 $\times \frac{3}{12}$ | 3,750 |
| 2014 | Rs 15,000 $\times \frac{3}{12}$ | 3,750 |
| 2015 | Rs 15,000 $\times \frac{2}{12}$ | 2,500 |
| 2016 | Rs 15,000 $\times \frac{1}{12}$ | 1,250 |

## 2.13 Redemption by Purchase in Open Market

When a company purchases its own debentures in the open market for the purpose of immediate cancellation, the purchase and cancellation of such debentures are termed as redemption by purchase in the open market. The advantage of such an option is that a company can redeem the debentures at its convenience whenever it has surplus funds. Secondly, the company can purchase them when they are available in market at a discount.

When the debentures are purchased from the market at a discount and cancelled, the journal entries are recorded as follows :

1. *On purchase of own debentures for immediate cancellation*

   Debentures A/c Dr.

   To Bank A/c

   To Profit on Redemption of Debentures A/c

2. *On transfer of Profit on Redemption*

   Profit on Redemption of Debenture A/c Dr.

   To Capital Reserve

In case, the debentures are purchased from the market at a price which is above the nominal value of debenture, the excess will be debited to loss on redemption of debentures. The journal entry in that case will be

1. Debentures A/c Dr.

   Loss on Redemption of Debentures A/c Dr.

   To Bank A/c

2. Statement of profit and loss Dr.

   To Loss on Redemption of Debentures A/c

***Illustration 22***

X Ltd. purchased its own debentures of Rs 100 each of the face value of Rs 20,000 from the open market for cancellation at Rs 92. Record necessary journal entries.

***Solution:***

**Books of X Limited**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Debentures A/c Dr. | | 20,000 | |
| | To Bank A/c | | | 18,400 |
| | To Profit on Redemption of Debentures A/c | | | 1,600 |
| | (Own debentures purchased at Rs 92 from the market) | | | |

| | | | | |
|---|---|---|---|---|
| | Profit on Redemption of Debenture A/c Dr.<br>To Capital Reserve<br>(Transfer of profit on cancellation of debentures to capital reserve) | | 1,600 | 1,600 |

* Alternatively, the following two journal entries may be passed:

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Own Debentures A/c<br>To Bank A/c<br>(Purchased its own debentures of Rs. 20,000 @ Rs. 92 each) | | 18,000 | 18,000 |
| | Debentures A/c<br>To Own Debentures A/c<br>To Profit on Redemption of Debentures A/c<br>(Own debentures purchased being cancelled) | | 20,000 | 18,000<br>2,000 |

***Illustration 23***

X Ltd. decided to redeem 250, 12% debentures of Rs 100 each amounting to Rs 25,000. For this purpose, the company purchased debentures amounting to Rs 20000 in the open market at Rs 98.50 each. Expenses of Rs 100 was incurred on it. The balance of debentures amounting to Rs 5,000 were reedemed by draw of lots. Journalise.

***Solution:***

**Books of X Ltd.**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| | Balance in Statement of profit and loss A/c Dr.<br>To Debenture Redemption Reserve A/c<br>(Transfer of profits to Debenture Reserve A/c | | 6,250 | 6,250 |
| | Debenture Redemption Investment A/c Dr.<br>To Bank A/c<br>(Required amount invested in DRI) | | 3,750 | 3,750 |
| | Bank A/c Dr.<br>To Debenture Redemption Investment A/c<br>(DRI encashed at the time of redemption of debentures) | | 3,750 | 3,750 |

| | | | | |
|---|---|---|---|---|
| | 12% Debentures A/c Dr.<br>To Bank A/c<br>To Profit on Redemption of Debentures A/c<br>(Purchase of 200 debentures @ Rs. 98.50 plus expenses amounting to Rs. 100.) | | 20,000 | <br>19,800<br>200 |
| | Profit on Redemption of Debentures A/c Dr.<br>To Capital Reserve<br>(Profit on Redemption transferred to Capital Reserve.) | | 200 | <br>200 |
| | 12% Debentures A/c Dr.<br>To Bank A/c<br>(Redemption of Rs. 50 debentures) | | 5,000 | <br>5,000 |
| | Debenture Redemption Reserve A/c Dr.<br>To General Reserve<br>(Balance is DRR transferred to General Reserve on Redemption of Debentures) | | 6,250 | <br>6,250 |

***Illustration 24***

On April 01, 2013, a company made an issue of 1,000, 6% debentures of Rs 1,000 each at Rs 960 per debenture. The terms of issue provided for the redemption of 200 debentures every year starting from 31 March 2015 either by purchase or by draw of lot at par at the company's option. Rs 10,000 was written-off as the debenture discount account in years ending on March 31, 2014–15. On 31.03.2015, the company purchased for cancellation debentures of the face value of Rs 80,000 at Rs 950 per debenture and of the face value of Rs 1,20,000 at Rs 900 per debenture.

Journalise the above transaction and show the profit on redemption would be treated.

***Solution:***

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| 2013<br>Apr. 01 | Bank A/c Dr.<br>To 6% Debentures Application & Allotment A/c<br>(Debentures application money received) | | 9,60,000 | <br>9,60,000 |
| Apr. 01 | 6% Debentures Application & Allotment A/c Dr.<br>Discount on Issue of Debentures A/c Dr.<br>To 6% Debentures A/c<br>(Debentures application money transferred to Debentures A/c) | | 9,60,000<br>40,000 | <br><br>10,00,000 |

| | | | | |
|---|---|---|---|---|
| 2014<br>Mar. 31 | Statement of profit and loss Dr.<br>To Discount on Issue of Debenture A/c<br>(Discount on issue of debentures written-off) | | 10,000 | <br>10,000 |
| Mar. 31 | Balance in Statement of profit and loss Dr.<br>To Debenture Redemption Reserve A/c<br>(Transfer of profits DRR) | | 2,00,000 | <br>2,00,000 |
| Apr. 30 | Debenture Redemption Investment A/c Dr.<br>To Bank A/c<br>(Required amount invested in DRI) | | 30,000 | <br>30,000 |
| 2015<br>Mar. 31 | Bank A/c Dr.<br>To Debenture Redemption Investment A/c<br>(DRI encashed at the time of Redemption of debentures) | | 30,000 | <br>30,000 |
| Mar. 31 | 6% Debentures A/c Dr.<br>To Bank A/c<br>To Profit on Redemption of Debenture A/c<br>(Redemption of 80 debentures by purchasing @ Rs 950 per debenture) | | 80,000 | <br>76,000<br>4,000 |
| Mar. 31 | 6% Debentures A/c Dr.<br>To Bank A/c<br>To Profit on Redemption of Debentures A/c<br>(Redemption of 80 debentures @ Rs 900 by purchasing in open market) | | 1,20,000 | <br>1,08,000<br>12,000 |
| Mar. 31 | Profit on Redemption of Debentures A/c Dr.<br>To Capital Reserve A/c<br>(Transfer of profits on cancellation of debentures of Capital Reserve A/c) | | 16,000 | <br>16,000 |
| Mar. 31 | Statement of profit and loss Dr.<br>To Discount on Issue of Debentures A/c<br>(Discount on debentures written-off) | | 10,000 | <br>10,000 |
| Mar. 31 | Debenture Redemption Reserve A/c Dr.<br>To General Reserve A/c<br>(Debenture Redemption Reserve in r/o debentures redeemed transferred to General Reserve A/c) | | 50,000 | <br>50,000 |

## 2.14 Redemption by Conversion

As stated earlier the debentures can also be redeemed by converting them into shares or new debentures. If debentureholders find that the offer is beneficial to them, they will take advantage of this offer. The new shares or debentures may be issued at par, at a discount or at a premium. It may be noted that no Debenture Redemption Reserve is required in case of convertible debentures because no funds are required for redemption.

***Illustration 25***

Arjun Plastics Limited redeemed 1,000, 15% debentures of Rs 100 each by converting them into equity shares of Rs 10 each at a premium of Rs 2.50 per share. The company also redeemed 500 debentures by utilising Rs 50,000 out of profit. Give the necessary journal entries.

***Solution:***

**Books of Arjun Plastic Limted**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Statement of Profit and Loss Dr.<br>To Debenture Redemption Reserve A/c<br>(Transfer of profit to Debenture Redemption Reserve) | | 50,000 | <br>50,000 |
| | Debenture Redemption Investment A/c Dr.<br>To Bank A/c<br>(Required amount invested in DRI) | | 7,500 | <br>7,500 |
| | 15% Debentures A/c Dr.<br>To Debentureholders A/c<br>(Amount due to debentureholders) | | 1,00,000 | <br>1,00,000 |
| | Debentureholders A/c Dr.<br>To Equity Shares Capital A/c<br>To Securities Premium Reserve A/c<br>(Issue of 800 equity shares at a premium of Rs 2.50 per share) | | 1,00,000 | <br>80,000<br>20,000 |
| | Bank A/c Dr.<br>To Debenture Redemption Investment A/c<br>(DRI encashed at the time of redemption of debentures) | | 7,500 | <br>7,500 |
| | Debenture A/c Dr.<br>To Debentureholders A/c<br>(Amount due to debentureholders) | | 50,000 | <br>50,000 |
| | Debentureholders A/c Dr.<br>To Bank A/c<br>(Payment to debentureholders) | | 50,000 | <br>50,000 |
| | Debenture Redemption Reserve A/c Dr.<br>To General Reserve<br>(Debenture Redemption Reserve transferred to General Reserve on redemption of Debentures) | | 50,000 | <br>50,000 |

***Illustration 26***

On April 01, 2013, a company made an issue of 10,000, 9% Debentures of Rs 100 each at Rs. 92 per debenture. The terms of issue provided for the redemption of 2,000 debentures every year starting from the March 31, 2016 either by conversion in to equity shares of Rs 20 each or by draw of lot at per at the company's option. On March 31, 2016, company redemption, 2,000, 9% debentures by converting them into Equity shares of Rs 20 each. Give the necessary Journal entries.

**Books of a Company**
**Journal**

| *Date* | *Particulars* | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|
| 2016 Mar. 31 | 9% Debentures A/c Dr. | | 2,00,000 | |
| | To Debentureholders A/c | | | 1,84,000 |
| | To Statement of Profit & Loss | | | 9,600 |
| | To Discount on Issue of Debentures A/c | | | 8,400 |
| | (Amount due to debentureholders on redemption by conversion) | | | |
| Mar. 31 | Debentureholders A/c Dr. | | 1,84,000 | |
| | To Equity Share Capital A/c | | | 1,84,000 |
| | (New equity shares issued to debentureholders) | | | |

*Working Notes :-*

i. Total Discount on the issue of 10,000 Debentures $= 10,00,000 \times \frac{8}{100}$

$= \text{Rs } 80,000$

Amount of Discount to be written off is determined as follows :

| *Year* | *Amount (Rs)* | *Ratio* | *Amount (Rs)* |
|---|---|---|---|
| 2013-14 | 10,00,000 | 5 | $80,000 \times \frac{5}{25} = 16,000$ |
| 2014-15 | 10,00,000 | 5 | $80,000 \times \frac{5}{25} = 16,000$ |
| 2015-16 | 10,00,000 | 5 | $80,000 \times \frac{5}{25} = 16,000$ |
| 2016-17 | 8,00,000 | 4 | $80,000 \times \frac{4}{25} = 12,800$ |
| 2017-18 | 6,00,000 | 3 | $80,000 \times \frac{3}{25} = 9,600$ |
| 2018-19 | 4,00,000 | 2 | $80,000 \times \frac{2}{25} = 6,400$ |
| 2019-20 | 20,000 | 1 | $80,000 \times \frac{1}{25} = 3,200$ |
| | | **25** | **80,000** |

ii. Up to March 31, 2016 discount on issue of debentures written off is Rs 48,000 out of total amount of Rs. 80,000.
So, on 2,000 debentures, now converted into shares amount of discount on issue of debentures written off is = $(2,00,000 \times \frac{8}{100}) \times \frac{48000}{80000}$ = Rs. 9,600

Remaining amount of discount amounting to Rs. 6,400 (Rs. 16,000 – Rs. 9,600) is not written off till March 31, 2016.

## 2.15 Sinking Fund Method

Sufficient funds are required to redeem debentures at the end of a specified period. To meet this requirement, the company may decide to create a sinking fund and invest adequate amount in marketable securities or bonds of other business entities. Normally, a company ensures that an equal amount is set aside every year to arrange the necessary funds at the time of redemption. This is called Sinking Fund method according to which the company makes necessary arrangements is sets aside a part of divisible profit every year and invest the same outside the business in marketable securities. An appropriate amount is calculated by referring to on Sinking Fund Table depending upon the rate of return on investments and the number of years for which investments are made. The amount thus ascertained is transferred from profits every year to Debenture Redemption Fund and its investment is termed as Debenture Redemption Fund Investment. These investment earn certain amount of income (call it interest) which is reinvested together with the fixed appropriated amount for the purpose in subsequent years In last year, the interest earned and the appropriated fixed amount are not invested. In fact, at this stage the Debenture Redemption Fund Investments are encashed and the amount so obtained is used for the redemption of debentures. Any profit or loss made on the encashment of Debenture Redemption Fund investments is also transferred to Debenture Redemption Fund Account. The creation of Debenture Redemption Fund Account serves the purpose of Debenture Redemption Reserve as required by law and the SEBI guidelines, and is, after redemption is transferred to general reserve.

Thus, the steps involved in the working of sinking fund method are :

1. Calculate the amount of profit to be set aside annually with the help of sinking fund table.
2. Set aside the amount of profit at the end of each year and credit to Debenture Redemption Fund (DRF) Account.
3. Purchase the investments of the equivalent amount at the end of first year and debit Debenture Redemption Fund Investment (DRFI) Account.

4. Receive interest on investment at the end of each subsequent year.
5. Purchase the investments equivalent to the fixed amount of profit set aside and the interest earned every year except last year (year of redemption).
6. Receive interest on investment for the last year.
7. Set aside the fixed amount of profit for the last year.
8. Encash the investments at the end of the year of redemption.
9. Transfer the profit/loss on sale of investments reflected in the balance of Debenture Redemption Fund Investment Account to Debenture Redemption Fund Account.
10. Make payment to debentureholdeRs
11. Transfer Debenture Redemption Fund A/c balance to General Reserve.

The sinking fund method is used for redemption of debentures by payment in lump sum on maturity, and the journal passed from year to year are as follows:

1. *At the end of First Year*

(a) For setting aside the fixed amount of profit for redemption

Statement of profit and loss Dr.
  To Debenture Redemption Fund A/c

(b) For investing the amount set aside for redemption

Debenture Redemption Fund Investment A/c Dr.
  To Bank A/c

2. *At the end of second year and subsequent years other than last year*

(a) For receipt of interest on Debenture Redemption Fund Investments

Bank A/c Dr.
  To Interest on Debenture Redemption A/c
  Fund Investment A/c

(b) For transfer of Interest on Debenture Redemption Fund Investment to Debenture Redemption Fund Account

Interest on Debenture Redemption Fund Investment A/c Dr.
  To Debenture Redemption Fund A/c

(c) For setting aside the fixed amount of profit for redemption

Statement of profit and loss Dr.
  To Debenture Redemption Fund A/c

(d) For investments of the amount set aside for redemption and the interest earned on DRFI

Debenture Redemption Fund Investment A/c Dr.
To Bank A/c

3. *At the end of last year*

(a) For receipt of interest
Bank A/c Dr.
To Interest on Debenture Redemption Fund Investment A/c

(b) For transfer of interest on Debenture Redemption Fund Investment to Debenture Redemption Fund Investment A/c
Interest on Debenture Redemption Fund Investment A/c Dr.
To Debenture Redemption Fund A/c

(c) For setting aside the fixed amount of profit for redemption
Statement of profit and loss Dr.
To Debenture Redemption Fund A/c

(d) For encashment of Debenture Redemption Fund Investments
Bank A/c Dr.
To Debenture Redemption Fund Investment A/c

(e) For the transfer of profit/loss on realisation of Debenture Redemption Fund Investments

(i) In case of Profit
Debenture Redemption Fund Investment A/c Dr.
To Debenture Redemption Fund A/c

Or

(ii) In case of Loss
Debenture Redemption Fund A/c Dr.
To Debenture Redemption Fund Investment A/c

(f) For amount due to debentureholders on redemption
Debenture A/c Dr.
To DebentureholdeRs A/c

(g) For payment to debentureholders
Debentureholders A/c Dr.
To Bank A/c

(h) For transfer of Debenture Redemption Fund Account balance to General Reserve
Debenture Redemption Fund A/c Dr.
To General Reserve A/c

### *Illustration 27*

X Ltd. issued Rs 10,00,000 debentures on April 01, 2014. These were to be redeemed on March 31, 2017. For this purpose, the company established a sinking fund. The investments were expected to earn interest @ 5% p.a. Sinking fund table shows that Rs 0.317208 invested annually at 5% amount to Re.1 in 3 years on March 31, 2017, the bank balance was Rs 4,20,000 before receipt of interest on Sinking Fund Investments. On that date, the investments were sold for Rs 6,56,000.

Calculate the interest to nearest rupee and investments be made to the nearest of Rs 100. Record necessary journal entries. Show Debentures Account, Debenture Redemption Fund Account and Debenture Redemption Fund Investment Account in the books of the company. Ignore entries for interest on debentures.

### *Solution:*

**Books of X Ltd.**
**Journal**

| *Date* | *Particulars* | | *L.F.* | *Debit Amount (Rs)* | *Credit Amount (Rs)* |
|---|---|---|---|---|---|
| 2014 Apr.1, | Bank A/c | Dr. | | 10,00,000 | |
| | To Debentures A/c | | | | 10,00,000 |
| | (Issue of debentures of Rs 10,00,000) | | | | |
| Mar.31, | Statement of Profit and Loss | Dr. | | 3,17,208 | |
| | To Debenture Redemption Fund A/c | | | | 3,17,208 |
| | (Annual instalment for redemption debited to statement of profit and loss) | | | | |
| | Debenture Redemption Fund Investments A/c | Dr. | | 3,17,200 | |
| | To Bank A/c | | | | 3,17,200 |
| | (Investment purchased) | | | | |
| 2016 Mar.31, | Bank A/c | Dr. | | 15,860 | |
| | To Interest on DRFI A/c | | | | 15,860 |
| | (Interest received @ 5% on investment ) | | | | |
| Mar. 31, | Interest on DRFI A/c | Dr. | | 15,860 | |
| | To Debenture Redemption Fund Investment A/c | | | | 15,860 |
| | (Interest on DRFI transferred to Debenture Redemption Fund) | | | | |

| | | | | |
|---|---|---|---|---|
| | Statement of profit and loss Dr.<br>To Debenture Redemption Fund A/c<br>(Annual instalment debited to Profit and Loss Appropriation Account) | | 3,17,208 | 3,17,208 |
| | Debenture Redemption Fund Investment A/c Dr.<br>To Bank A/c<br>(Investment purchased for annual instalment plus interest) | | 3,33,100 | 3,33,100 |
| 2017<br>Mar.31, | Bank A/c Dr.<br>To Interest on DRFI A/c<br>(Interest received @ 5% on investment) | | 32,516 | 32,516 |
| | Interest on DRFI A/c Dr.<br>To Debenture Redemption Fund A/c<br>(Interest on DRFI transferred to Debenture Redemption Fund) | | 32,516 | 32,516 |
| | Statement of profit and loss Dr.<br>To Debenture Redemption Fund A/c<br>(Annual instalment debited to Profit & Loss Appropriation Account) | | 3,17,208 | 3,17,208 |
| | Bank A/c Dr.<br>To Debenture Redemption Fund Investment A/c<br>(Sale proceeds of DRFI) | | 6,56,000 | 6,56,000 |
| | Debenture Redemption Fund Investment A/c Dr.<br>To Debenture Redemption Fund A/c<br>(Transfer of profit on sale of investments to Debenture Redemption Fund) | | 5,700 | 5,700 |
| | Debentures A/c Dr.<br>To Debenturesholders A/c<br>(Debentures amount transferred to debentureholders) | | 10,00,000 | 10,00,000 |
| | Debenturesholders A/c Dr.<br>To Bank A/c<br>(Debentures holders paid the money) | | 10,00,000 | 10,00,000 |
| | Debenture Redemption Fund A/c Dr.<br>To General Reserve A/c<br>(Transfer of credit balance of Debenture Redemption Fund General Reserve) | | 10,05,700 | 10,05,700 |

**Debentures Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2015 Mar.31 | Balance c/d | | 10,00,000 | 2014 Apr.01 | Bank | | 10,00,000 |
| | | | **10,00,000** | | | | **10,00,000** |
| 2016 Mar.31 | Balance c/d | | 10,00,000 | 2015 Apr.01 | Balance b/d | | 10,00,000 |
| | | | **10,00,000** | | | | **10,00,000** |
| 2017 Mar.31 | Bank | | 10,00,000 | 2016 Apr.01 | Balance b/d | | 10,00,000 |
| | | | **10,00,000** | | | | **10,00,000** |

**Debentures Redemption Fund Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2015 Mar.31 | Balance c/d | | 3,17,208 | 2014 Apr.01 | Statement of profit and loss | | 3,17,208 |
| | | | **3,17,208** | | | | **3,17,208** |
| 2016 Mar.31 | Balance c/d | | 6,50,276 | 2015 Apr.01 | Balance b/d | | 3,17,208 |
| | | | | | Interest on DRFI | | 15,860 |
| | | | | | Statement of profit and loss | | 3,17,208 |
| | | | **6,50,276** | | | | **6,50,276** |
| 2017 Mar.31 | General Reserve | | 10,05,700 | 2016 Apr.01 | Balance b/d | | 6,50,276 |
| | | | | | Interest on DRFI | | 32,516 |
| | | | | | Profit & Loss Appropriation | | 3,17,208 |
| | | | | | DRFI | | 5,700 |
| | | | **10,05,700** | | | | **10,05,700** |

**Debenture Redemption Fund Investment Account**

*Dr.* *Cr.*

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2015 Mar.31 | Bank | | 3,17,200 | 2015 Mar.31 | Balance c/d | | 3,17,200 |
| | | | **3,17,200** | | | | **3,17,200** |
| 2015 Apr.01 | Balance b/d | | 3,17,200 | 2016 Mar.31 | Balance c/d | | 6,50,300 |
| Mar.31 | Bank | | 3,33,100 | | | | |
| | | | **6,50,300** | | | | **6,50,300** |
| 2016 Apr.01 | Balance b/d | | 6,50,300 | 2017 Mar.31 | Bank (Sale Proceeds) | | 6,56,000 |
| Mar.31 | DRF | | 5,700 | | | | |
| | | | **6,56,000** | | | | **6,56,000** |

**Bank Account**

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Balance b/d | | 4,20,000 | 2017 Mar.31 | Debenture | | 10,00,000 |
| | DRF | | 6,56,000 | Mar.31 | Balance c/d | | 76,000 |
| | | | **10,76,000** | | | | **10,76,000** |
| 2017 Apr.01 | Balance b/d | | 76,000 | | | | |

*Note :* The annual instalment of profit to be set aside for redemption has been worked out as 0.317208 × 10,00,000 = Rs 3,17,208.

***Illustration 28***

The balance sheet of XYZ Ltd., disclosed the following information as on March 31, 2015.

| | Rs |
|---|---|
| 15% debentures | 15,00,000 |
| Debenture Redemption Fund | 11,63,600 |
| Debenture Redemption Fund Investment (10% Govt. Securities) | 11,63,600 |

The contribution to Debenture Redemption Fund was Rs 1,30,800 p.a. for the year 2015–16 and 2016–17. Debentures are due for payment on December 31, 2017. Prepare the above accounts in the books of company assuming that securities were realised on March 31, 2017 for a sum of Rs 13,52,000 and interest on securities on March 31, was immediately invested.

***Solution:***

**Debentures Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2016 Mar.31 | Balance c/d | | 15,00,000 | 2015 Apr.01 | Balance b/d | | 15,00,000 |
| | | | **15,00,000** | | | | **15,00,000** |
| 2017 Mar.31 | Bank | | 15,00,000 | 2016 Apr.01 | Balance b/d | | 15,00,000 |
| | | | **15,00,000** | | | | **15,00,000** |

**Debentures Redemption Fund Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2016 Mar.31 | Balance c/d | | 14,10,760 | 2015 Apr.01 | Balance b/d | | 11,63,600 |
| | | | | Mar.31 | Interest on DRFI | | 1,16,360 |
| | | | | Mar.31 | Statement of profit and loss | | 1,30,800 |
| | | | **14,10,760** | | | | **14,10,760** |
| 2017 Mar.31 | Debenture Redemption Fund Investment | | 58,760 | 2016 Apr.01 | Balance b/d | | 14,10,760 |
| Mar.31 | General Reserve | | 16,23,876 | 2017 Mar.31 | Interest on DRFI | | 1,41,076 |
| | | | | Mar.31 | Statement of profit and loss | | 1,30,800 |
| | | | **16,82,636** | | | | **16,82,636** |

**Debenture Redemption Fund Investment Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2015 Apr.01 | Balance b/d | | 11,63,600 | 2016 Mar.31 | Balance c/d | | 14,10,760 |
| 2016 Mar.31 | Bank | | 2,47,160* | | | | |
| | | | **14,10,760** | | | | **14,10,760** |
| 2016 Apr.01 | Balance b/d | | 14,10,760 | 2017 Mar.31 | Bank | | 13,52,000 |
| | | | | | Debenture Redemption Fund | | 58,760 |
| | | | **14,10,760** | | | | **14,10,760** |

* (Interest + Instalment = Rs 1,16,360 + Rs 1,30,800 = Rs 2,47,160)

***Illustration 29***

LCM Ltd. purchased for cancellation its own 10,00,000, 9% Debentures of Rs 500 each at Rs 480 each. Record necessary journal entries.

***Solution:***

**Books of LCM Ltd.**
**Journal**

| Date | Particulars | L.F. | Debit Amount (Rs) | Credit Amount (Rs) |
|---|---|---|---|---|
| | Own Debentures A/c Dr. | | 48,00,00,000 | |
| | To Bank A/c | | | 48,00,00,000 |
| | (Purchased its own debentures @ Rs 480 each) | | | |
| | 9% Debenture A/c Dr. | | 50,00,00,000 | |
| | To Own Debenture | | | 48,00,00,000 |
| | To Profit on cancellation of debentures A/c | | | 2,00,00,000 |
| | (Own debenture purchased being cancelled) | | | |
| | Profit on cancellation of debentures A/c Dr. | | 2,00,00,000 | |
| | To Capital Reserve | | | 2,00,00,000 |
| | (Profits on cancellation of debentures transferred to capital reserve) | | | |

***Illustration 30***

The following balances appeared in the books of Madhu Ltd. as on April 01, 2016:

| | *(Rs)* |
|---|---|
| 12% Debentures | 1,50,000 |
| Debenture Redemption Fund | 1,25,000 |
| Debenture Redemption Fund Investments | 1,25,000 |

The Debenture Redemption Fund Investments were represented by Rs 1,30,000, 9% Govt. Securities.

The annual instalment added to the fund was Rs 20,600. On March 31 2017, the bank balance before the receipt of interest on investments was Rs 40,000. On the date, all the investments were sold at 84% and the debentures were duly redeemed.

Prepare Debentures Account, Debenture Redemption Fund Account, Debenture Redemption Fund Investment Account and Bank Account for 2016–2017. The company closes its books on March 31, every year.

***Solution:***

**Books of Madhu Ltd.**
**Debenture Redemption Fund Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Debenture Redemption Fund Investment (Loss on Sale) | | 15,800 | 2016 April 1 | Balance b/d | | 1,25,000 |
| Mar.31 | General Reserve (Transfer) | | 1,41,500 | 2017 Mar.31 | Interest on Debenture Redemption Fund Investment (9% on Rs 1,30,000) | | 11,700 |
| | | | | Mar.31 | Statement of profit and loss | | 20,600 |
| | | | **1,57,300** | | | | **1,57,300** |

**Debenture Redemption Fund Investment Account**

*Dr.* *Cr.*

| *Date* | *Particulars* | *J.F.* | *Amount (Rs)* | *Date* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|---|---|
| 2016 April 01 | Balance b/d (Face value Rs 1,30,000) | | 1,25,000 | 2017 Mar.31 | Bank (84% of Rs 1,30,000) | | 1,09,200 |
| | | | | | By Debenture Redemption Fund (Loss on Sale) | | 15,800 |
| | | | **1,25,000** | | | | **1,25,000** |

**Bank Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Balance b/d | | 40,000 | 2017 Mar.31 | Debenture | | 1,50,000 |
| | Interest on D.R.F Investment | | 11,700 | Mar.31 | Balance c/d | | 10,900 |
| Mar.31 | Debenture Redemption Fund Investment (Sales Proceeds) | | 1,09,200 | | | | |
| | | | **1,60,900** | | | | **1,60,900** |

**12% Debentures Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Bank A/c | | 1,50,000 | 2016 April 30 | Balance b/d | | 1,50,000 |
| | | | **1,50,000** | | | | **1,50,000** |

*Working Notes :*

1. Interest on Debenture Redemption Fund Investments of 1,30,000 at 9% will be Rs 11,700.
2. Investments realised at 84%. Hence, the investments of Rs 1,30,000 will realise Rs 1,09,200.

**Test your Understanding – II**

**Select the correct answer for the following multiple choice questions:**

1. Debentures which are transferable by mere delivery are:
   (a) Registered debentures, (b) First debentures,
   (c) Bearer debentures.

2. The following journal entry appears in the books of X Co. Ltd.

| | | | |
|---|---|---|---|
| Bank a/c | Dr. | 4,75,000 | |
| Loss on issue of debenture a/c | Dr. | 75,000 | |
| To 12% Debentures a/c | | | 5,00,000 |
| To Premium on Redemption of Debenture A/c | | | 50,000 |

   Debentures have been issued at a discount of:
   (a) 15%, (b) 5%, (c) 10%.

3. X Co. Ltd. purchased assets worth Rs 28,80,000. It issued debentures of Rs 100 each at a discount of 4 per cent in full satisfaction of the purchase consideration. The number of debentures issued to vendor is:
   (a) 30,000, (b) 28,800, (c) 32,000.
4. Convertible debentures cannot be issued at a discount if:
   (a) They are to be immediately converted,
   (b) They are not to be immediately converted,
   (c) None of the above.
5. Discount on issue of debentures is shown under the following head in the Balance Sheet:
   (a) Statement of profit and loss,
   (b) Other non-Corrent Assets,
   (c) Debentures account.
6. When debentures are issued at par and are redeemable at a premium, the loss on such an issues debited to :
   (a) Statement of profit and loss,
   (b) Debentures applications and allotment account,
   (c) Loss on issue of debentures account.
7. Excess value of net assets over purchase consideration at the time of purchase of business is credited to :
   (a) General reserve,
   (b) Capital reserve,
   (c) Vendors' account.
8. When all the debentures are redeemed, balance in the debentures redemption fund account is transferred to :
   (a) Capital reserve,
   (b) General reserve,
   (c) Statement of profits and loss.
9. The nominal and book values of debenture redemption fund investments account are respectively Rs 1,00,000 and Rs 96,000. The company sold investments of nominal value of Rs 30,000 at a price which was just sufficient to redeem debentures of Rs 30,000 at 10% premium, the profit on sale of investment is :
   (a) Rs 4,200, (b) Rs 3,000, (c) Rs Nil.
10. Own debentures are those debentures of the company which:
    (a) The company allots to its own promoters,
    (b) The company allots to its Director,
    (c) The company purchases from the market and keeps them as investments.
11. Profit on cancellation of own debentures is transferred to :
    (a) Statement of profit and loss,
    (b) Debenture redemption reserve,
    (c) Capital reserve.

12. When debentures are redeemed out of profits, an equal amount is transferred to :
    (a) General reserve,
    (b) Debenture redemption reserve,
    (c) Capital reserve.
13. Profit on sale of debenture redemption fund investments in the first instance is credited to :
    (a) Debenture redemption fund account,
    (b) Statement of profit and loss,
    (c) General reserve account.
14. The balance of sinking fund investment account after the realisation of investments is transferred to:
    (a) Statement of Profit and Loss,
    (b) Debentures account,
    (c) Sinking fund account.
15. When debentures are issued at a discount and are redeemable at a premium, which of the following accounts is debited at the time of issue:
    (a) Debentures account,
    (b) Premium on redemption of debentures account,
    (c) Loss on issue of debentures account.

### Test your Understanding – III

**I. Identify the account to be debited in case of the following transactions.**

1. Issue of debentures to a vendor in consideration of the business purchase.
2. Setting aside the amount for creating sinking fund for redemption of debentures.
3. The balance of debenture redemption reserve account after redemption of the debentures.
4. Purchase of own debentures by the company.
5. Writing-off discount on issue of debentures.

**II. Identify the account to be credited in case of the following transactions.**

1. Debentures issued at a discount and are redeemable at par.
2. Transfer of interest on Sinking fund investments to sinking fund account.
3. Balance of DRR account after the redemption of Debentures.
4. Profit on sale of sinking fund investment account.
5. Writing-off the loss on issue of debentures.

### Do it Yourself

1. G. Ltd., has Rs 800 lakh, 10% debentures of Rs 100 each due for redemption on March 31, 2017. Assume that Debenture Redemption Reserve has a balance of Rs 3,40,00,00,000 on that date. Record necessary entries at the time of redemption of debentures.
2. R. Ltd., issued 88,00,000, 8% debenture of Rs 50 each at a premium of 5 % on July 1, 2014 redeemable at par by conversion of debentures into shares of

Rs 20 each at a premium of Rs 2 per share on June 30, 2017. Record necessary entries for redemption of debentures.

3. C. Ltd. has outstanding 11,00,000, 10% debentures of Rs 200 each, on April 1, 2017. The Board of Directors have decided to purchase 20% of own debentures for cancellation at Rs 200 each. Record necessary entries for the same.
4. Record necessary journal entries in the books of the Company in each of the following cases for redemption of 1,000, 12% Debentures of Rs 10 each issued at par:
   (a) Debentures redeemed at par by conversion into 12% Preference Shares of Rs 100 each,
   (b) Debentures redeemed at a premium of 10% by conversion into Equity Shares issued at par,
   (c) Debentures redeemed at a premium of 10% by conversion into Equity Shares issued at a premium of 25%.
5. On 31 March, 2017 Janta Ltd. converted its Rs 88,00,000, 6% debentures into equity shares of Rs 20 each at a premium of Rs 2 per share. Record necessary journal entries in the books of the company for redemption of debentures.
6. Anirudh Ltd. has 4,000, 8% debentures of Rs 100 each due for redemption on March 31, 2017. The company has a debenture redemption reserve of Rs 50,000 on that date. Assuming that no interest is due, record the necessary journal entries at the time of redemption of debentures.

***Illustration 31***

The following balances appeared in the books of a company on April 01, 2016:

| | |
|---|---|
| 12% Debentures | Rs 4,00,000 |
| 12% Debentures Sinking Fund | Rs 3,00,000 |
| 12% Debentures Sinking Fund Investment | Rs 3,00,000 |

(Represented by 10%, Rs 4,00,000 secured Bonds of Govt. of India)

Annual contribution to the sinking fund was Rs 60,000 made on March 31 each year. On March 31, 2017, balance at Bank was Rs 3,00,000 after receipt of interest on Debentures Sinking Fund Investment. The company sold the investment at a loss of 18% and the debentures were paid off. You are required to prepare the following accounts for the year 2016–17:

(i) Debentures account,
(ii) Debentures sinking fund account,
(iii) Debentures sinking fund investment account,
(iv) Bank account.

**Solution:**

**12% Debentures Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | Bank | | 4,00,000 | 2016 Apr.01 | Balance b/d | | 4,00,000 |
| | | | **4,00,000** | | | | **4,00,000** |

**12% Debenture Sinking Fund Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 Mar.31 | General Reserve | | 4,28,000 | 2017 Apr.01 | Balance b/d | | 3,00,000 |
| | | | | 2017 Mar.31 | Statement of profit and loss | | 60,000 |
| | | | | Mar.31 | Interest on Debenture Sinking Fund Investment | | 40,000 |
| | | | | Mar.31 | Debenture Fund Investment | | 28,000 |
| | | | **4,28,000** | | | | **4,28,000** |

**12% Debenture Sinking Fund Investment Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2016 Apr.01 | Balance b/d | | 3,00,000 | 2017 Mar.31 | Bank | | 3,28,000 |
| Mar.31 | To Debenture Sinking Fund (Profit Transfers) | | 28,000 | | | | |
| | | | **3,28,000** | | | | **3,28,000** |

**Bank Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2016 Apr.1 | Balance b/d balance includes Rs 40,000, interest @ 10% on Rs 4,00,000 ) | | 3,00,000 | 2017 Mar.31 | 12% Debentures | | 4,00,000 |
| | | | | | Balance c/d | | 2,28,000 |
| Mar.31 | 12% Debentures Sinking Fund Investment | | 3,28,000 | | | | |
| | | | **6,28,000** | | | | **6,28,000** |

***Illustration 32***

The following balances stood as on 31 March, 2017 in the books of a Company:

12% Debentures Rs 10,00,000
Debenture Redemption Fund Rs 10,00,360
Debenture Redemption Fund Investments represented by:
Rs 4,00,000 9% Loan Rs 3,80,000
Rs 7,00,000 8% Govt. Paper Rs 6,20,360

On the above date, the investments were sold as follows: 9% loan at par, and 8% Govt. Paper at 90% of nominal value. The Debentures were also redeemed accordingly. Show the necessary ledger accounts.

***Solution:***

**12% Debentures Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 March 31 | Bank | | 10,00,000 | 2017 March 31 | Balance b/d | | 10,00,000 |
| | | | **10,00,000** | | | | **10,00,000** |

**Debenture Redemption Fund Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 March 31 | General Reserve | | 10,30,000 | 2017 March 31 | balance b/d | | 10,00,360 |
| | | | | | Debenture Redemption Fund Investment | | 29,640 |
| | | | **10,30,000** | | | | **10,30,000** |

**Debenture Redemption Fund Investment Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 | Balance b/d | | | 2017 | Bank (9% Loan ) | | 4,00,000 |
| March 31 | 9% Loan | | 3,80,000 | March 31 | Bank | | 6,30,000 |
| March 31 | 8% Govt.Paper | | 6,20,360 | March 31 | (8% Govt.Paper) | | |
| March 31 | Debenture Redemption Fund | | 29,640 | | | | |
| | | | **10,30,000** | | | | **10,30,000** |

**Bank Account**

Dr. Cr.

| Date | Particulars | J.F. | Amount (Rs) | Date | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|---|---|
| 2017 March 31 | To Debenture Redemption Fund Investment: | | | 2017 March 31 | By 12% Debentures | | 10,00,000 |
| | 9% Loan | | 4,00,000 | | By Balance c/d | | 30,000 |
| | 8% Govt. Paper | | 6,30,000 | | | | |
| | | | **10,30,000** | | | | **10,30,000** |

Note: The Bank Balance has not been given in the question.

**Do it Yourself**

1. X Ltd. decides to redeem 8,000, 10% debentures of Rs 100 each on April 1, 2017 at a premium of 5%. The company has a surplus of Rs 9,00,000 in the statement of profit and loss. The company closes its books on December 31 every year. What journal entries the company will be recording to redeem the above debentures ?

2. G Ltd. issued 5,00,000, 12% debentures of Rs 100 each on April 1, 2013 redeemable at par on July 1, 2017. The company received applications for 6,00,000 debentures and the allotment was made to all the applicants on pro-rata basis. The debentures were redeemed on due date. How much amount of Debenture Redemption Reserve is to be created before the redemption is carried out? Also record necessary journal entries regarding issue and redemption of debenture. Ignore tax deducted at source.

## *Terms Introduced in the Chapter*

1. Debenture
2. Bond
3. Mortgaged Debenture
4. Perpetual Debenture
5. Zero Coupon Rate Debenture
6. Specific Coupon Rate Debenture
7. Registered Debenture
8. Bearer Debenture
9. Charge
10. Fixed Charge
11. Floating Charge
12. First Charge
13. Maturity Date
14. Principal
15. Discount/Loss on Issue of Debenture
16. Purchase Consideration
17. Redemption of Debenture
18. Draw of Lots
19. Own Debentures
20. Redemption out of Capital
21. Redemption out of Profits
22. Redemption of Convertible Debenture
23. Debentures Sinking Fund
24. Collateral Security
25. Second Charge
26. Purchase of Debenture from Open Market

## *Summary*

*Debenture:* Debenture is the acknowledgements of debt. It is a loan capital raised by the company from general public. A person/holder of such a written acknowledgement is called 'debenture holder'.

*Bond:* Bond is similar to debenture in terms of contents and texture. The only difference is with respect of issue condition, i.e, bonds can be issued without pre-determined rate of interest as it is in case of deep discount bonds.

*Charge:* Charge is an incumbrance to meet the obligation under trust deed on certain assets which company agrees to mortgage either by way of first or second charge. First charge implies the priority in repayment of loan. Those who hold first charge against any specific asset will realise their claim from the net realisable value of such assets. Any amount of surplus from such assets given under first charge will be utilised for setting the claims for holder of second charge.

*Types of Debenture:* Debentures are of various types such as: secured and unsecured debentures redeemable and perpetual debentures, convertible and non-convertible debentures, zero coupon rate and specific rate, registered and bearer debentures.

*Issue of Debenture:* Debentures are said to be issued at par when the amount to be collected on them is equal to their nominal or face value. If the issue price is more than nominal or face value, it is said to be issued at a premium. If the issue price is less than the nominal or face value, it is said to be issued on discount. The amount received as premium is credited to 'securities premium account' whereas amount of discount allowed is debited to "loss/discount on issue" and is written-off over the years

*Issue of Debentures for consideration other than Cash:* Sometimes debentures can be issued to vendor or suppliers of patents, copyrights and for transfer of intellectual property rights on preferential basis without receiving money in cash.

*Purchase Consideration:* Purchase consideration is amount paid by purchasing company in consideration for purchase of assets/business firm, another enterprise/vendor.

*Collateral Security:* Any security in addition to primary security is called 'collateral security'.

*Redemption of Debenture:* Means discharge of liability on account of debenture/bond by repayment made to debenture holders Normally, the redemption takes place on the expiry of period for which they have been issued, depending upon the terms and conditions of issue.

## *Questions for Practice*

### Short Answer Questions

1. What is meant by a Debenture?
2. What does a Bearer Debenture mean?
3. State the meaning of 'Debentures issued as a collateral security'.
4. What is meant by 'Issue of debentures for consideration other than cash'?
5. What is meant by Issue of debenture at discount and redeemable at premium?
6. What is 'Capital Reserve'?
7. What is meant by a 'Irredeemable Debenture'?
8. What is a 'Convertible Debenture'?
9. What is meant by 'Mortgaged Debentures'?
10. What is discount on issue of debentures?
11. What is meant by 'Premium on Redemption of Debentures'?
12. How debentures are different from shares? Give two points.
13. Name the head under which 'discount on issue of debentures' appears in the balance sheet of a company.

14. What is meant by redemption of debentures?
15. Can the company purchase its own debentures?
16. What is meant by redemption of debentures by conversion?
17. How would you deal with 'Premium on Redemption of Debentures?
18. What is meant by 'Redemption out of Capital?
19. What is meant by redemption of debentures by 'Purchase in the Open Market'?
20. Under which head is the 'Debenture Redemption Reserve' shown in the balance sheet.

**Long Answer Questions**

1. Explain the different types of debentures?
2. Distinguish between a debenture and a share. Why debenture is known as loan capital? Explain.
3. Describe the meaning of 'Debenture Issued as Collateral Securities'. What accounting treatment is given to the issue of debentures in the books of accounts?
4. How is 'Discount on Issue of Debentures' treated in the books of accounts? How will you deal with the 'discount in issue of debentures' when the debentures are to be redeemed in instalments?
5. Explain the different terms for the issue of debentures with reference to their redemption.
6. Differentiate between redemption of debentures out of capital and out of profits.
7. Explain the guidelines of SEBI for creating Debenture Redemption Reserve.
8. Describe the steps for creating Sinking Fund for redemption of debentures.
9. Can a company purchase its own debentures in the open market? Explain.
10. What is meant by conversion of debentures? Describe the method of such a conversion.

***Numerical Questions***

1. G. Ltd. issued 75,00,000, 6% debentures of Rs 50 each at par payable Rs 15 on application and Rs 35 on allotment, redeemable at par after 7 years from the date of issue of debentures. Record necessary entries in the books of Company.
2. Y. Ltd. issued 2,000, 6% debentures of Rs 100 each payable as follows: Rs 25 on application; Rs 50 on allotment and Rs 25 on first and final call.
3. A. Ltd. issued 10,000, 10% debentures of Rs 100 each at a premium of 5% payable as follows:

   Rs 10 on Application;

   Rs 20 along with premium on allotment and balance on first and final call.

   Record necessary Journal Entries.

4. A. Ltd. issued 90,00,000, 9% debenture of Rs 50 each at a discount of 8%, redeemable at par any time after 9 years Record necessary entries in the books of A. Ltd.

5. A. Ltd. issued 4,000, 9% debentures of Rs 100 each on the following terms:

   Rs 20 on Application;

   Rs 20 on Allotment;

   Rs 30 on First call; and

   Rs 30 on Final call.

   The public applied for 4,800 debentures. Applications for 3,600 debentures were accepted in full. Applications for 800 Debentures were allotted 400 debentures and applications for 400 Debentures were rejected.

6. T. Ltd. offered 2,00,000, 8% debenture of Rs 500 each on June 30, 2014 at a premium of 10% payable as Rs 200 on application (including premium) and balance on allotment, redeemable at par after 8 years But application are received for 3,00,000 debentures and the allotment is made on pro-rata basis. All the money due on application and allotment is received. Record necessary entries regarding issue of debentures.

7. X. Ltd. invites application for the issue of 10,000, 14% debentures of Rs 100 each payable as to Rs 20 on application, Rs 60 on allotment and the balance on call. The company receives applications for 13,500 debentures, out of which applications for 8,000 debentures are allotted in full, applications for 5000 debentures were alloted 40% of received application, and the remaining applications were rejected. The surplus money on partially allotted applications is utilised towards allotment. All the sums due are duly received.

8. R. Ltd. offered 20,00,000, 10% debentures of Rs 200 each at a discount of 7% redeemable at premium of 8% after 9 years Record necessary entries in the books of R. Ltd.

9. M. Ltd. took over assets of Rs 9,00,00,000 and liabilities of Rs 70,00,000 of S.Ltd. and issued 8% debentures of Rs 100 each. Record necessary entries in the books of M. Ltd.

10. B. Ltd. purchased assets of the book value of Rs 4,00,000 and took over the liability of Rs 50,000 from Mohan Bros. It was agreed that the purchase consideration, settled at Rs. 3,80,000, be paid by issuing debentures of Rs 100 each.

    What Journal entries will be made in the following three cases, if debentures are issued: (a) at par; (b) at discount; (c) at premium of 10%? It was agreed that any fraction of debentures be paid in cash.

    (Note: Goodwill Rs 30,000)

11. X. Ltd. purchased a Machinery from Y. Ltd. at an agreed purchase consideration of Rs 4,40,000 to be satisfied by the issue of 12% debentures of Rs 100 each at a premium of Rs 10 per debenture. Journalise the transactions.

12. X. Ltd. issued 15,000, 10% debentures of Rs 100 each. Give journal entries and present it in the balance sheet in each of the following cases:

    (i) The debentures are issued at a premium of 10%;
    (ii) The debentures are issued at a discount of 5%;
    (iii) The debentures are issued as a collateral security to bank against a loan of Rs 12,00,000; and
    (iv) The debentures are issued to a supplier of machinery costing Rs 13,50,000.

13. Journalise the following:
    (i) A debenture issued at Rs 95, repayable at Rs 100;
    (ii) A debenture issued at Rs 95, repayable at Rs 105; and
    (iii) A debenture issued at Rs 100, repayable at Rs 105;

    The face value of debenture in each of the above cases is Rs 100.

14. A. Ltd. issued 50,00,000, 8% debentures of Rs 100 at a discount of 6% on April 01, 2009, redeemable at premium of 4% by draw of lots as under:

    20,00,000 debentures on March, 2011

    10,00,000 debentures on March, 2013

    20,00,000 debentures on March, 2014.

    Compute the amount of discount to be written-off in each year till debentures are paid. Also prepare discount/loss on issue of debenture account.

15. A company issues the following debentures:
    (i) 10,000, 12% debentures of Rs 100 each at par but redeemable at premium of 5% after 5 years;
    (ii) 10,000, 12% debentures of Rs 100 each at a discount of 10% but redeemable at par after 5 years;
    (iii) 5,000, 12% debentures of Rs 1000 each at a premium of 5% but redeemable at par after 5 years;
    (iv) 1,000, 12% debentures of Rs 100 each issued to a supplier of machinery costing Rs 95,000. The debentures are repayable after 5 years; and
    (v) 300, 12% debentures of Rs 100 each as a collateral security to a bank which has advanced a loan of Rs 25,000 to the company for a period of 5 years

    Pass the journal entries to record the: (a) issue of debentures; and (b) repayment of debentures after the given period.

16. A company issued debentures of the face value of Rs,5,00,000 at a discount of 6% on April 01, 2012. These debentures are redeemable by annual drawings of Rs,1,00,000 made on March 31 each year. The directors decided to write-off discount based on the debentures outstanding each year.

    Calculate the amount of discount to be written-off each year. Give journal entries also.

17. A company issued 10% debentures of the face value of Rs.1,20,000 at a discount of 6% on April 01, 2011. The debentures are payable by annual drawings of Rs 40,000 commencing from the end of third year.

    How will you deal with discount on debentures?

    Show the discount on debentures account in the company ledger for the period of duration of debentures. Assume accounts are closed on March 31 every year.

18. B. Ltd. issued debentures at 94% for Rs 4,00,000 on April 01, 2011 repayable by five equal drawings of Rs 80,000 each. The company prepares its final accounts on March 31 every year.

    Indicate the amount of discount to be written-off every accounting year assuming that the company decides to write-off the debentures discount during the life of debentures. (Amount to be written-off: 2012 Rs 8,000; 2013 Rs 6,400; 2014 Rs 4,800; 2015 Rs 2,000; 2016 Rs 1,600).

19. B. Ltd. issued 1,000, 12% debentures of Rs 100 each on April 01, 2014 at a discount of 5% redeemable at a premium of 10%.

    Give journal entries relating to the issue of debentures and debentures interest for the period ending March 31, 2015 assuming that interest is paid half-yearly on September 30 and March 31 and tax deducted at source is 10%.

20. What journal entries will be made in the following cases when company redeems debentures at the expiry of period by serving the notice: (a) when debentures were issued at par with a condition to redeem them at premium; (b) when debentures were issued at premium with a condition to redeem at par; and (c) when debentures were issued at discount with a condition to redeem them at premium?

21. On April 01, 2012, X. Ltd. issues 5,000, 8% debentures of Rs 100 each repayable at par at the end of three years It has been decided to set up a cumulative sinking fund for the purpose of their redemption. The investments are expected to realise 4% net. The Sinking Fund Table shows that Rs 0.320348 amounts to one rupee @4% per annum in three years. On March 31, 2015 the balance at Bank was Rs 2,42,360 and the investments realised Rs 3,25,000. The debentures were paid off.

    Give journal entries and show ledger account.

    (Answer: Loss on sale of Investment Rs 2,246)

22. On April 01, 2014 a company issued 15% debentures of Rs 10,00,000 at par. The debentures were redeemable at par after three years from the date of Issue. A sinking fund was set up to raise funds for redemption of debentures. The amount for the purpose was invested in 6% Government securities of Rs 100 each available at par. The sinking fund table shows that if investments earn 6% per annum, to get Re.1 at the end of 3 years, one has to invest Rs 0.31411 every year together with interest that will be earned. On March 31, 2017, all the Government securities were sold at a total loss of Rs 6,000 and the debentures were redeemed at par.

    Prepare Debentures Account Sinking Fund Account, Sinking Fund Investment Account and Interest on Sinking Fund Investment Company closes its books of accounts every year on March 31.

23. On April 01, 2016 the following balances appeared in the books of Z. Ltd.:

| | Rs |
|---|---|
| 6% Debentures | 1,00,000 |
| Debentures Redemption Reserve Fund | 80,000 |
| D.R. Reserve Fund Investments | 80,000 |

The investments consisted of 4% Government securities of the face value of Rs 90,000.

The annual instalment was Rs 16,400. On March 31, 2017, the balance at Bank was Rs 26,000 (after receipt of interest on D.R. Reserve Fund Investment). Investments were realised at 92% and the debentures were redeemed. The interest for the year had already been paid.

Show the ledger accounts affecting redemption.

24. The following balances appeared in the books of A. Ltd. on April 01, 2017

| | Rs |
|---|---|
| 12% Debentures | 4,00,000 |
| Debentures Redemption Fund | 3,60,000 |
| Debentures Redemption Fund Investment | 3,60,000 |
| Securities Premium | 30,000 |
| Bank Balance | 1,00,000 |

On April 01, 2017, the company redeemed all the debentures at 105 per cent out of funds raised by selling all the investments at Rs 3,48,000. Prepare the necessary ledger accounts.

25. The following balances appeared in the books of Z. Ltd. on April 01, 2016

| | Rs |
|---|---|
| 12% Debentures | 1,50,000 |
| Debentures Redemption Fund | 1,25,000 |
| Debentures Redemption Fund Investment | 1,25,000 |
| (Represented by Rs 1,47,500, 3% Govt. Securities | 1,25,000 |

The annual instalment added to the fund is Rs 20,575. On March 31, 2017, the Bank balance after the receipt of interest on the investment was Rs 39,100. On that date, all the investments were sold at 83 per cent and the debentures were duly redeemed.

Show the necessary ledger accounts for the year 2016–17.
(Answer: Loss Rs 2,575)

26. What entries for the redemption of debentures will be done when : (a) debentures are redeemed by annual drawings out of profits; (b) debentures are redeemed by drawing a lot out of capital; and (c) debentures are redeemed by purchasing them in the open market when sinking fund for the redemption of debentures is not maintained – (i) when out of profit, and (ii) when out of capital?

27. A. Ltd. Company issued Rs. 5,00,000 debentures at a discount of 5% repayable at par by annual drawings of Rs 1,00,000.

Make the necessary ledger accounts in the books of the company for the first year.

28. X. Ltd. issued 5,000, 15% debentures of Rs 100 each on April 01, 2013 at a discount of 10%, redeemable at a premium of 10% in equal annual drawings in 4 years out of capital.

    Give journal entries both at the time of issue and redemption of debentures. (Ignore the treatment of loss on issue of debentures and interest).

29. Z. Ltd. issued 2,000, 14% debentures of Rs 100 each on April 01, 2013 at a discount of 10%, redeemable at a premium of 10% in equal annual drawings in 4 years out of profits.

    Give journal entries both at the time of issue and redemption of debentures. (Ignore the treatment of loss on issue of debentures and interest).

30. A. Ltd. purchased its own debentures of the face value of Rs 2,00,000 from the open market for immediate cancellation at Rs 92. Record the journal entries.

31. X. Ltd. redeemed 1,000, 12% debentures of Rs 50 each by converting them into 15% New Debentures of Rs 100 each. Journalise.

32. On April 01, 2014, a company made an issue of 5,000, 8% debentures of Rs 100 each at Rs 94 per debentures. The terms of issue provided for the redemption of 1,000 debenture every year starting from March 31, 2016 either by purchase from open market or by converting them into Equity shares of Rs 10 each at a premium of Rs 2.50 per share. On March 31, 2016, the company redeemed 1,000 debentures by converting them into equity shares. Give the necessary journal entries.

## Answers to Test your Understanding

### Test your Understanding – I

1. False, 2. True, 3. False, 4. True, 5. True, 6. False, 7. False, 8. True, 9. False, 10. False, 11. False.

### Test your Understanding – II

1 (c), 2 (b), 3 (a), 4 (a), 5 (b), 6 (c), 7 (b), 8 (b), 9 (a), 10 (c),

11 (c), 12 (b), 13 (a), 14 (c), 15 (c).

### Test your Understanding – III

(I) Vendors Account, (2) Surplus i.e, Balance in Statement of Profit and Loss (3) Debenture Redemption Reserve Account, (4) Own Debentures Account, (5) Statement of Profit and Loss.

(II) (1) Debenture Account, (2) Sinking Fund Account, (3) General Reserve Account, (4) Sinking Fund Account, (5) Loss on Issue of Debentures Account.

# Financial Statements of a Company

3

**Learning Objectives**

*After studying this chapter, you will be able to :*

- *explain the nature and objectives of financial statements of a company;*
- *describe the form and content of Statement of Profit and Loss of a company as per schedule III;*
- *describe the form and content of balance sheet of a company as per schedule III;*
- *explain the significance and limitations of financial statements; and*
- *prepare the financial statements.*

Having understood how a company raises its capital, we have to learn the nature, objectives and types of financial statements it has to prepare including their contents, format, uses and limitations. The financial statements are the end products of accounting process. They are prepared following the consistent accounting concepts, principles, procedures and also the legal environment in which the business organisations operate. These statements are the outcome of the summarising process of accounting and are, therefore, the sources of information on the basis of which conclusions are drawn about the profitability and the financial position of a company. Hence, they need to be arranged in a proper form with suitable contents so that the shareholders and other users of financial statements can easily understand and use them in their economic decisions in a meaningful way.

## 3.1 Meaning of Financial Statements

Financial statements are the basic and formal annual reports through which the corporate management communicates financial information to its owners and various other external parties which include investors, tax authorities, government, employees, etc. These normally refer to: (a) the balance sheet (position statement) as at the end of accounting period, and (b) the statement of profit and loss of a company. Now-a-days, the cash flow statement is also taken as an integral component of the financial statements of a company.

## 3.2 Nature of Financial Statements

The chronologically recorded facts about events expressed in monetary terms for a defined period of time are the basis for the preparation of periodical financial statements which reveal the financial position as on a date and the financial results obtained during a period. The American Institute of Certified Public Accountants states the nature of financial statements as, "the statements prepared for the purpose of presenting a periodical review of report on progress by the management and deal with the status of investment in the business and the results achieved during the period under review. They reflect a combination of recorded facts, accounting principles and personal judgements".

The following points explain the nature of financial statements:

1. *Recorded Facts:* Financial statements are prepared on the basis of facts in the form of cost data recorded in accounting books. The original cost or historical cost is the basis of recording transactions. The figures of various accounts such as cash in hand, cash at bank, trade receivables, fixed assets, etc., are taken as per the figures recorded in the accounting books. The assets purchased at different times and at different prices are put together and shown at costs. As these are not based on market prices, the financial statements do not show current financial condition of the concern.
2. *Accounting Conventions:* Certain accounting conventions are followed while preparing financial statements. The convention of valuing inventory at cost or market price, whichever is lower, is followed. The valuing of assets at cost *less* depreciation principle for balance sheet purposes is followed. The convention of materiality is followed in dealing with small items like pencils, pens, postage stamps, etc. These items are treated as expenditure in the year in which they are purchased even though they are assets in nature. The stationery is valued at cost and not on the principle of cost or market price, whichever is less. The use of accounting conventions makes financial statements comparable, simple and realistic.
3. *Postulates:* Financial statements are prepared on certain basic assumptions (pre-requisites) known as postulates such as going concern postulate, money measurement postulate, realisation postulate, etc. Going concern postulate assumes that the enterprise is treated as a going concern and exists for a longer period of time. So the assets are shown on historical cost basis. Money measurement postulate assumes that the value of money will remain the same in different periods. Though there is drastic change in purchasing power of money, the assets purchased at different times will be shown at the

amount paid for them. While, preparing statement of profit and loss the revenue is included in the sales of the year in which the sale was undertaken even though the sale price may be received over a number of years. The assumption is known as realisation postulate.

4. *Personal Judgements:* Under more than one circumstance, facts and figures presented through financial statements are based on personal opinion, estimates and judgements. The depreciation is provided taking into consideration the useful economic life of fixed assets. Provisions for doubtful debts are made on estimates and personal judgements. In valuing inventory, cost or market value, whichever is less is being followed. While deciding either cost of inventory or market value of inventory, many personal judgements are to be made based on certain considerations. Personal opinion, judgements and estimates are made while preparing the financial statements to avoid any possibility of over statement of assets and liabilities, income and expenditure, keeping in mind the convention of conservatism.

Thus, financial statements are the summarised reports of recorded facts and are prepared the following accounting concepts, conventions and requirements of Law.

## 3.3 Objectives of Financial Statements

Financial statements are the basic sources of information to the shareholders and other external parties for understanding the profitability and financial position of any business concern. They provide information about the results of the business concern during a specified period of time in terms of assets and liabilities, which provide the basis for taking decisions. Thus, the primary objective of financial statements is to assist the users in their decision-making. The specific objectives include the following:

1. *To provide information about economic resources and obligations of a business:* They are prepared to provide adequate, reliable and periodical information about economic resources and obligations of a business firm to investors and other external parties who have limited authority, ability or resources to obtain information.
2. *To provide information about the earning capacity of the business:* They are to provide useful financial information which can gainfully be utilised to predict, compare and evaluate the business firm's earning capacity.
3. *To provide information about cash flows:* They are to provide information useful to investors and creditors for predicting, comparing and evaluating, potential cash flows in terms of amount, timing and related uncertainties.

4. *To judge effectiveness of management:* They supply information useful for judging management's ability to utilise the resources of a business effectively.
5. *Information about activities of business affecting the society:* They have to report the activities of the business organisation affecting the society, which can be determined and described or measured and which are important in its social environment.
6. *Disclosing accounting policies:* These reports have to provide the significant policies, concepts followed in the process of accounting and changes taken up in them during the year to understand these statements in a better way.

## 3.4 Types of Financial Statements

The financial statements generally include two statements: balance sheet and statement of profit and loss which are required for external reporting and also for internal needs of the management like planning, decision-making and control. Apart from these, there is also a need to know about movements of funds and changes in the financial position of the company. For this purpose, a statement of changes in financial position of the company or a cash flow statement is prepard.

Every company registered under The Companies Act 2013 shall prepare its balance sheet, statement of profit and loss and notes to account thereto in accordance with the manner prescribed in the revised Schedule III to the Companies Act, 2013 to harmonise the disclosure requirement with the accounting standards and to converge with new reforms. With regard to this, the Ministry of Corporate Affairs (MCA) had prescribed a (Revised) Schedule VI to the Companies Act, 1956 (vide Notification dated 28.02.2011). It is applied to the financial statements prepared for all financial periods beginning on or after April 01, 2011 by the Indian Companies.

**Balance Sheet as at 31st March, 20.....**

| Particulars | Note No. | Figure as at the end of Current reporting period | Figure as at the end of Previous reporting period |
|---|---|---|---|
| **I. EQUITY AND LIABILITIES** | | | |
| 1) Shareholder's Funds | | | |
| (a) Share Capital | | | |
| (b) Reserves and Surplus | | | |
| (c) Money received against share warrants | | | |
| 2) Share Application money pending allotment | | | |
| 3) Non-current Liabilities | | | |
| (a) Long term borrowings | | | |
| (b) Deferred tax liabilities (net) | | | |
| (c) Other long term liabilities | | | |
| (d) Long term provisions | | | |
| 4) Current Liabilities | | | |
| (a) Short-term borrowings | | | |
| (b) Trade payables | | | |
| (c) Other current liabilities | | | |
| (d) Short-term provisions | | | |
| **Total** | | | |
| **II. ASSETS** | | | |
| 1) Non-Current Assets | | | |
| (a) Fixed assets | | | |
| (i) Tangible assets | | | |
| (ii) Intangible assets | | | |
| (iii) Capital work-in-progress | | | |
| (iv) Intangible assets under development | | | |
| (b) Non-current investments | | | |
| (c) Deferred tax assets (net) | | | |
| (d) Long-term loans and advances | | | |
| (e) Other non-current assets | | | |
| 2) Current Assets | | | |
| (a) Current investments | | | |
| (b) Inventories | | | |
| (c) Trade receivables | | | |
| (d) Cash and cash equivalents | | | |
| (e) Short term loans and advances | | | |
| (f) Other current assets | | | |
| **Total** | | | |
| **See accompanying notes to the financial statements** | | | |
| **NOTES:** | | | |

**Exhibit. 3.1: Vertical Form of Balance Sheet**

### *Important Features of Presentation*

1. It applies to all Indian companies preparing financial statement commencing on or after April 01, 2011.
2. It does not apply to (i) Insurance or Banking Company, (ii) Company for which a form of balance sheet or income statement is specified under any other Act.
3. Accounting standards shall prevail over Schedule III of the Companies Act, 2013.
4. Disclosure on the face of the financial statements or in the notes are essential and mandatory.
5. Terms in the revised Schedule III will carry the meaning as defined by the applicable accounting standards.
6. Balance to be maintained between excessive details that may not assist users of financial statements and not providing important information.
7. Current and non-current bifurcation of assets and liabilities is applicable.

**Box 1**

**Rounding-off Rule for figures in the Presentation of Financial Statements**

Rounding off of figures to be reported in the financial statements is based on the size of turnover:

1. Turnover < Rs.100 crore: Nearest hundreds, thousands, lakhs or millions or decimal thereof;
2. Turnover > Rs.100 crore: Nearest lakhs or millions or decimal thereof;

8. Rounding off requirements is mandatory (refer box 1).
9. Vertical format for presentation of financial statement is prescribed (refer Exhibit 3.1).
10. Debit balance in the statement of profit and loss to be disclosed as negative figure under the head "Surplus".
11. Mandatory disclosure for share application money pending allotment.
12. 'Sundry Debtors' and 'Sundry Creditors' replaced by terms 'Trade Receivables' and 'Trade Payables'.

### Shareholders Fund

The shareholders' funds are sub-classified on the face of the balance sheet.

a) Share Capital
b) Reserves and Surplus
c) Money received against Share Warrants

**Share Capital**

Disclosures relating to share capital are to be given in notes to accounts. The following additions/modifications are significant:

a) For each class of shares, recognition of the number of shares outstanding at the beginning and at the end of the reporting period is required.

b) The rights, preferences and restrictions attached to each class of shares including restrictions on the distribution of dividends and repayment of capital.

c) In order to bring clarity regarding the identity of ultimate owners of the company:

   i) Disclosure of shares in respect of each class in the company held by its holding company or its ultimate holding company including shares held by subsidiaries or associates of holding company or the ultimate holding company in aggregate.

   ii) Disclosure of shares in the company held by each shareholder holding more than 5% shares specifying the number of shares held.

   iii) Disclosure of the following for the period of 5 years immediately preceding the date of the balance sheet:

   - Aggregate number and class of shares allotted as fully paid up pursuant to contracts without payment being received in cash.
   - Aggregate number and class of shares allotted as fully paid up by way of bonus shares.
   - Aggregate number and class of shares bought back.

This may be noted that the information of shareholders funds are presented on the face of financial statements limited only to broad and significant items. Details are given in Notes to Accounts.

d) For each class of share capital:

   i) The number and amount of share authorised.

   ii) The number of shares issued, subscibed, fully paid and subscribed but not fully paid.

   iii) Par value per share.

   iv) Reconciliation of the number of shares outstanding at the beginning and end of the accounting period.

   v) Rights, preferences and restrictions attaching each class of shares including restrictions on the distribution of dividends and repayment of capital.

   vi) Aggregate number of shares with respect to each class in the company held by its holding company, its ultimate holding company including shares held by or by subsidiaries or associates of the holding company or the ultimate holding company.

vii) Shares reserved for issue under options and contracts/ commitments for the sale of shares/disinvestment, including terms and amount.

viii) For a period of 5 years immediately proceeding the date at which balance sheet in prepared for:

(a) Shares reserved under contracts/commitments.

(b) Number and class of shares bought back.

(c) Number and class of shares allotted for consideration other than cash and bonus shares.

ix) Terms of any securities convertible into equity/preference shares issued along with earliest date of conversion in descending order, starting from the farthest such date.

x) Calls unpaid (aggregate).

xi) Forfeited shares (amout originally paid up).

**Reserve and Surplus**

Reserves and Surplus are required to be classified as:

i) Capital Reserve
ii) Capital Redemption Reserve
iii) Securities Premium Reserve
iv) Debenture Redemption Reserve
v) Revaluation Reserve
vi) Share Options Outstanding Account
vii) Other Reserves (Specifying nature and purpose)
viii) Surplus: Balance in statement of profit and loss; disclosing allocations and Appropriation such as dividend, bonus shares, transfer to/from reserve, etc.

Significant additions/modifications regarding disclosure of reserve and surplus are as follows:

a) A reserve specifically represented by earmarked investments shall be termed as "Fund".

b) 'Debit' balance of statement of profit and loss shall be shown as a negative figure under 'Surplus' head.

c) The balance of "Reserve and Surplus" after adjusting negative balance of Surplus, if any, shall be shown under "Reserve and Surplus" read even if the resulting figure is 'negative'.

d) Share options outstanding account has been recognised as a separate item under 'Reserve and Surplus'. ICAI's Guidance Note on Accounting for Employee share based payments requires a credit balance in the *'Stock option outstanding Account'* to be disclosed in balance sheet under separate heading' between share capital and reserves and surplus as a part of shareholders fund.

**Money Received against share warrants**
Money received against share warrants' to be disclosed as a separate line item under 'shareholder's fund'.

**Illustration 1**
Dinkar Ltd. has an authorised capital of Rs. 50,00,000 divided into equity shares of Rs. 100 each. The company invited applications for 40,000 shares, applications for 36,000 shares were received. All calls were made and duly received except for 500 shares on which the final call of Rs. 20 was not received. The company forfeited 200 shares on which final call was not received. Show how share capital will appear in the balance sheet of the company. Also prepare 'Notes to Accounts' for the same.

**Solution:**

**Books of Dinkar Limited**
**Balance Sheet as at .......... (Date)**

| Particulars | Note No. | Amount (Rs.) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholders' funds | | |
| a) Share capital | 1 | **35,90,000** |

Notes to Accounts

| Particulars | Amount (Rs.) | Amount (Rs.) |
|---|---|---|
| 1. Share capital | | |
| Authorised share capital | | |
| 50,000 equity shares of Rs. 100 each | | 50,00,000 |
| Issued capital | | |
| 40,000 equity shares of Rs. 100 each | | 40,00,000 |
| Subscribed and fully paid up capital | | |
| 35,500 equity shares of Rs. 100 each fully paid | | 35,50,000 |
| Subscirbed but not fully paid-up capital | | |
| 300 equity shares of Rs. 100 each fully called up | 30,000 | |
| Less: Calls-in-arrears (300×20) | (6,000) | |
| | 24,000 | |
| Add: Share forfeiture A/c (200 shares × Rs. 80) | 16,000 | 40,000 |
| | | **35,90,000** |

**Current and Non-current Classification**
The classified balance sheet in terms of current and non-current assets and current and non-current liabilities have been introduced. The

criteria for defining current assets and liabilities has been clearly spelled out with non-current assets and liabilities being the residual items.

**Current/Non-current distinction**

An item is classified as current:

- if it is involved in entity's operating cycle or,
- is expected to be realised/settled within twelve months or,
- if it is held primarily for trading or,
- is cash and cash equivalent or,
- if entity does not have on unconditional rights to defer settlement of liability for atleast 12 months after the reporting period,
- Other assets and liabilities are non-current.

**Illustration 2**

Show the following items in the balance sheet of Amba Ltd. as on March 31, 2017:

| | Rs. |
|---|---|
| 8% Debentures | 10,00,000 |
| Equity share capital | 50,00,000 |
| Securities premium | 20,000 |
| Preliminary expenses | 40,000 |
| Statement of Profit & Loss (cr.) | 1,50,000 |
| Discount on issue of 8% debentures | 40,000 |
| (Amount to be written in next 4 years approx.) | |
| Loose tools | 20,000 |
| Bank balance | 60,000 |
| Cash in hand | 38,000 |

**Solution:**

**Books of Amba Ltd.**
***Balance Sheet as at March 31, 2017**

| Particulars | | Note No. | Amount (Rs.) |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | | 50,00,000 |
| b) Reserve and surplus | | 1 | 1,30,000 |
| 2. Non-current Liabilities | | | |
| a) Long-term borrowings | | 2 | 10,00,000 |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Other non-current assets | | 3 | 30,000 |
| 2. Current assets | | | |
| a) Inventories | | 4 | 20,000 |
| b) Cash and cash equivalents | | 5 | 98,000 |
| c) Other current assets | | 6 | 10,000 |

* Relevant items only

Notes to Accounts

| Particulars | | Amount (Rs.) | Amount (Rs.) |
|---|---|---|---|
| 1. Reserve and surplus | | | |
| Securities premium | 20,000 | | |
| Less: Preliminary expenses | (40,000) | | |
| | | **(20,000)** | |
| Statement of profit and loss | | 1,50,000 | **1,30,000** |
| 2. Long-term borrowings | | | |
| 8% debentures | | | 10,00,000 |
| 3. Other non-current assets | | | |
| Discount on issue of 8% debentures (¾ of Rs. 40,000) | | | 30,000 |
| 4. Inventory | | | |
| Loose tools | | | 20,000 |
| 5. Cash and cash equivalents | | | |
| Bank balance | | 60,000 | |
| Cash in hand | | 38,000 | **98,000** |
| 6. Other current assets | | | |
| Discount on issue of 8% debentures (¼ of Rs. 40,000) | | | **10,000** |

**Important points:**

- Preliminary expenses are to be written-off completely in the year in which such expenses are incurred. They should be written-off first from securities premium and the balance if any, from statement of profit & loss.
- Borrowing costs such as discount on issue of debentures could be written-off over loan period.

**Share application money pending allotment**

Share application money not exceeding the issued capital and to the extent non-refundable shall be classified as non-current. It will be shown on this face of balance sheet as share application money pending allotment.

**Borrowings**

Total borrowings are categorised into long-term borrowings, short-term borrowings and current maturities to long-term debt.

(i) Loans which are repayable in more than twelve months/operating cycle are classified as long-term borrowings on the face of balance sheet.

(ii) Loans repayable on demand or whose original tenure is not more than twelve months/operating cycle are classified as short-term borrowings on the face of balance sheet.

(iii) Current maturities to long-term loan include amount repayable within twelve months/operating cycle under other current liabilities with Note to Account.

**Deferred tax assets/liabilities** are always non-current. This is in accordance to IAS-I.

**Trade payables**

Sundry creditors have been replaced with the term Trade payables and are classified as current and non-current. Trade payables to be settled beyond 12 months from the date of balance sheet or beyond the operating cycle are classified under "other long-term liabilities" with Note to Account. For example, purchase of goods and services in normal course of business. The balance of trade payables are classified as current liabilities on the face of balance sheet.

**Provisions**

The amount of provision settled within 12 months from balance sheet date or within operating cycle period from date of its recognition is classified as short term provisions and shown under current liabilities on the face of balance sheet. Others are depicted as long-term provisions under non-current liabilities on the face of balance sheet.

**Fixed assets**

There is no change in the treatment of fixed assets. Both tangible and intangible assets are non-current. This may also be noted if the useful life of the asset is less than 12 months, it will still fall under non-current.

**Investments**

Investments are also classified into current and non-current categories. Investments expected to realise within twelve months are considered as current investments under current assets. Others are classified as non-current investments under non-current assets. Both are however shown on the face of the balance sheet.

**Inventories**

All inventories are always treated as current.

**Trade receivables**

Trade receivables realised beyond twelve months from reporting date/operating cycle starting from the date of their recognition are classified as "Other non-current assets" under the head non-current assets with Note to Accounts. For example, sale of goods or services rendered in normal course of business. Others are classified as current assets and shown on the face of the balance sheet.

**Cash and cash equivalent**

It is always current however, amounts which qualify as cash and cash equivalents as per IAS-3 is shown here. The supremacy is accorded to AS over Schedule III, cash and cash equivalents are to the disclosed in accordance to IAS-3.

**Illustration 3**

Show the following items in the balance sheet of Sunfill Ltd. as at March 31, 2017:

| Particulars | Amount (Rs.) |
|---|---|
| General Reserve (since 31 March 2012) | 5,00,000 |
| Statement of profit & loss (debit balance) for 2016–17 | (3,00,000) |

**Solution:**

**Books of Sunfill Ltd.**
**Balance Sheet as at March 31, 2017**

| Particulars | Note No. | 31st March 2017 (Rs.) | 31st March 2016 (Rs.) |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| Reserve and surplus | 1 | 2,00,000 | 5,00,000 |

Notes to Accounts

| Particulars | Amount (Rs.) |
|---|---|
| 1. Reserve and surplus | |
| General Reserve (1 April, 2016) | 5,00,000 |
| Less: Statement of profit and loss (Dr. balance) | (3,00,000) |
| | **2,00,000** |

**Illustration 4**

Show the following items in the balance sheet of Avalon Ltd., as at March 31, 2017:

| | Rs. in Lakh |
|---|---|
| General Reserve (since 31 March 2016)<br>Statement of Profit & Loss (Debit Balance) for 2016–17 | 5<br>(8) |

**Solution:**

**Books of Avalon Ltd.**
**Balance Sheet as at March 31, 2017**

| Particulars | Note No. | 31 March 2017 (Rs.) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholders' Funds | | |
| a) Reserve and Surplus | 1 | (3,00,000) |

Notes to Accounts

| Particulars | Amount (Rs.) |
|---|---|
| 1. Reserve and Surplus | |
| i) General reserve (1 April, 2012) | **5,00,000** |
| ii) Less: Statement of profit and loss (debit balance) | **(8,00,000)** |
| | (3,00,000) |

**Illustration 5**

Arushi Ltd. issued 5,000, 10% debentures of Rs. 100 each at par but redeemable at a premium of 5% after 5 years. Give journal entries and also prepare the balance sheet of the company.

**Solution:**

**Books of Arushi Ltd.**
**Journal**

| Date | Particulars | L.F. | Debit (Rs.) | Credit (Rs.) |
|---|---|---|---|---|
| | Bank A/c Dr. | | 5,00,000 | |
| | To 10% Debenture Application and Allotment A/c | | | 5,00,000 |
| | (Being application money received) | | | |
| | 10% Debenture Application and Allotment A/c Dr. | | 5,00,000 | |
| | Loss on Issue of Debentures A/c Dr. | | 25,000 | |
| | To 10% Debentures A/c | | | 5,00,000 |
| | To Premium on Redemption of Debentures A/c | | | 25,000 |
| | (Being debentures issued at par but redeemable at premium) | | | |

**Arushi Ltd.**

**Balance Sheet as at ............**

| Particulars | | Note No. | Amount (Rs.) |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Non-current Liabilities | | | |
| a) Long-term borrowing | | 1 | 5,00,000 |
| b) Other long-term liabilities | | 2 | 25,000 |
| **Total** | | | **5,25,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Other non-current assets | | 3 | 20,000 |
| 2. Current Assets | | | |
| a) Cash and cash equivalents | | 4 | 5,00,000 |
| b) Other current assets | | 5 | 5,000 |
| **Total** | | | **5,25,000** |

Notes to Accounts

| Particulars | Amount (Rs.) |
|---|---|
| 1. Long-term borrowings | |
| 5,000, 10% debentures of Rs. 100 each | 5,00,000 |
| 2. Other long term liabilities | |
| Premium on redemption of debentures A/c | 25,000 |
| 3. Other non-current assets | |
| Loss on issue of debentures (4/5th of Rs. 25,000) | 20,000 |
| 4. Cash and cash equivalents | |
| Cash at bank | 5,00,000 |
| 5. Other current assets | |
| Loss on issue of debentures (1/5th of Rs. 25,000, i.e., amount to be written-off in next 12 months) | 5,000 |

**Do it yourself**

Classify the following items in the balance sheet of a company under Major heads and Sub-heads

| S. No. | Items | Major Head | Sub-head (if any) |
|---|---|---|---|
| 1. | Goodwill | | |
| 2. | Forfeited shares | | |
| 3. | Acceptances | | |
| 4. | Preliminary expenses | | |
| 5. | Capital reserve | | |
| 6. | Loans from banks | | |
| 7. | Investment in shares and debentures | | |
| 8. | Interest accrued and due on debentures | | |

| | | | | | |
|---|---|---|---|---|---|
| | 9. | Interest accrued but not due on Secured Loans | | | |
| | 10. | Interest accrued but not due on Unsecured Loans | | | |
| | 11. | Interest accrued on Investments | | | |
| | 12. | Surplus | | | |
| | 13. | Securities Premium Reserve | | | |
| | 14. | Loose Tools | | | |
| | 15. | Provision for Taxation | | | |
| | 16. | Under writing Commission | | | |
| | 17. | Bills of Exchange | | | |
| | 18. | Unclaimed dividend | | | |
| | 19. | Short term loans & advances | | | |
| | 20. | Live stock | | | |
| | 21. | Calls unpaid/calls in arrears | | | |
| | 22. | Uncalled liability on shares partly paid | | | |
| | 23. | Discount allowed on issue of shares and debentures (if amortised after 12 months) | | | |
| | 24. | Discount allowed on issue of shares and debentures (if amortised within 12 months) | | | |
| | 25. | Pre-paid Insurance | | | |
| | 26. | Stores and spare parts | | | |
| | 27. | Advances from customers | | | |
| | 28. | Debentures redemption reserve | | | |
| | 29. | Premium on redemption of debentures | | | |
| | 30. | Loss on issue of debentures | | | |
| | 31. | Debentures redemption fund | | | |
| | 32. | Debentures redemption fund investment | | | |
| | 33. | Vehicles | | | |
| | 34. | Sinking fund | | | |
| | 35. | Sinking fund investment | | | |
| | 36. | Advances to suppliers | | | |
| | 37. | Patents, trademarks, design | | | |
| | 38. | Calls in advance | | | |
| | 39. | Deposits with custom authorities | | | |
| | 40. | Arrears of fixed cumulative dividend | | | |
| | 41. | Furniture and fittings | | | |
| | 42. | Brokerage on issues of shares | | | |
| | 43. | Statement of profit & loss (Dr.) | | | |
| | 44. | Capital work-in-progress | | | |
| | 45. | Provision for doubtful debts | | | |
| | 46. | Statement of profit & loss (Cr.) | | | |

| | |
|---|---|
| 47. | Uncalled liability on partly paid shares held as investments |
| 48. | Claims against the company not acknowledged as debt |
| 49. | Capital redemption reserve |
| 50. | Public deposits |
| 51. | Authorised capital |

**Illustration 6**

From the given particulars of Shine and Bright Co. Ltd., as at March 31, 2017, prepare balance sheet in accordance to the Schedule III:

| Particulars | Amount Rs. | Particulars | Amount Rs. |
|---|---|---|---|
| Preliminary expenses | 2,40,000 | Goodwill | 30,000 |
| Discount on Issue of shares | 20,000 | Loose Tools | 12,000 |
| 10% Debentures | 2,00,000 | Motor vehicles | 4,75,000 |
| Stock in trade | 1,40,000 | Provision for tax | 16,000 |
| Cash at bank | 1,35,000 | | |
| Bills receivables | 1,20,000 | | |

**Solution:**

**Book of Shine and Bright Ltd.**
**Balance Sheet as at March 31, 2017**

| Particulars | Note No. | Figure as at the end of current reporting period | Figure as at the end of previous reporting period |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Non-current Liabilities | | | |
| a) Long-term borrowings | 1 | 2,00,000 | |
| 2. Current liabilities | | | |
| a) Short-term provisions | 2 | 16,000 | |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | | | |
| Tangible assets | 3 | 4,75,000 | |
| Intangible assets | 4 | 30,000 | |
| 2. Other non-current assets* | 5 | 2,60,000 | |
| Current assets | | | |
| a) Inventories | 6 | 1,52,000 | |
| b) Trade receivables | 7 | 12,000 | |
| c) Cash and cash equivalents | | 1,35,000 | |

Notes to Accounts

| Particulars | | Amount (Rs.) |
|---|---|---|
| 1. Long-term borrowings: | | |
| 10% debentures | | 2,00,000 |
| 2. Short-term provisions: | | |
| Provision for taxation | | 16,000 |
| 3. Fixed assets: | | |
| (i) Tangible assets | | |
| Motor vehicles | | 4,75,000 |
| (ii) Intangible assets | | |
| Goodwill | | 30,000 |
| 4. Other non-current assets | | |
| Preliminary expenses | 2,40,000 | |
| Discount on issue of debentures | 20,000 | 2,60,000 |
| 5. Inventories | | |
| Stock in trade | 1,40,000 | |
| Loose tools | 12,000 | 1,52,000 |
| 6. Trade receivables | | |
| Bills receivables | | 12,000 |
| 7. Cash & cash equivalents | | |
| Cash at bank | | 1,35,000 |

* It has been assumed that discount on issue of debentures is not written-off in the next 12 months of the reporting period.

### 3.4.2 Form and content of Statement of Profit and Loss

**Statement of Profit and Loss for the year ended _____________**

| | Particulars | Note No. | Figure as at the end of Current reporting period | Figure as at the end of Previous reporting period |
|---|---|---|---|---|
| I | Revenue from operations | | | |
| II | Other income | | | |
| III | Total Revenue (I+II) | | | |
| IV | Expenses: | | | |
| | Cost of materials consumed | | | |
| | Purchases of stock-in-trade | | | |
| | Changes in inventories of finished goods | | | |

| | | | | |
|---|---|---|---|---|
| | Work-in-progress and stock-in-trade<br>Employee benefits expense<br>Finance costs<br>Depreciation and amortisation expense<br>Other expenses<br>Total expenses | | | |
| V | Profit before extraordinary items and tax (III-IV) | | | |
| VI | Exceptional items | | | |
| VII | Profit before extraordinary items and tax (V-VI) | | | |
| VIII | Extraordinary items | | | |
| IX | Profit before tax (VII-VIII) | | | |
| X | Tax expense:<br>(1) Current tax<br>(2) Deferred tax | | | |
| XI | Profit/(Loss) for the period from continuing operations (IX-X) | | | |
| XII | Profit/(Loss) from discontinuing operations | | | |
| XIII | Tax expense of discontinuing operations | | | |
| XIV | Profit/(Loss) from Discontinuing operations (after tax) (XII-XIII) | | | |
| XV | Profit/(Loss) for the period (XI + XIV) | | | |
| XVI | Earnings per equity share:<br>(1) Basic<br>(2) Diluted | | | |

**Exhibit. 3.2: Form of Statement of Profit and Loss**

The items of statement of profit and loss are discussed as follows:

1. Revenue from operations

   This includes:

   (i) Sale of products

   (ii) Sale of services

   (iii) Other operating revenues

In respect to a finance company, revenue from operational shall include revenue from interest, dividend and income from other financial services.

It may be noted that under each of the above heads shall be disclosed separately by way of notes to accounts to the extent applicable.

2. Other income

   (i) Interest income (in case of a company other than a finance company),

   (ii) Dividend income,

   (iii) Net gain/loss on sale of investments,

   (iv) Other non-operating income (net of expenses directly attributable to such income).

3. Expense

| Expenses incurred to earn the income shown under various heads as discussed below: | |
|---|---|
| (a) Cost of Materials | It applies to manufacturing companies. It consists of raw materials and other materials consumed in manufacturing of goods. |
| (b) Purchase of Stock-in-trade | It means purchases of goods for the purpose of trading. |
| (c) Changes in inventories of finished goods, WIP and stock-in-trade | It is the difference between opening inventory (stock) of finished goods, WIP and stock-in-trade and closing inventory. |
| (d) Employees benefit expenses | Expenses incurred on employees towards salary, wages, leave encashment, staff welfare, etc., are shown under this head. Employees benefit expenses may be further categorised into direct and indirect expenses. |
| (e) Finance cost | It is the expenses towards interest charges during the year on the borrowings. Only the interest cost is to be shown under this head. Other financial expenses such as bank charges are shown under "Other Expenses". |
| (f) Depreciation | Depreciation is the diminution in the value of fixed assets whereas amortisation is writing off the amount relating to intangible assets. |
| (g) Other expenses | All other expenses which do not fall in the above categories are shown under other expenses. Other expenses may further be categorised into direct expenses, indirect expenses and non-operating expenses. |

**Illustration 8**

From the following particulars, prepare Statement of profit and loss for the year ending March 2017:

| Balances | Rs. | Rs. |
|---|---|---|
| Plant and Machinery | 1,60,000 | |
| Land | 6,74,000 | |
| Depreciation on Plant and Machinery | 16,000 | |
| Purchases (Adjusted) | 4,00,000 | |
| Closing stock | 1,50,000 | |
| Wages | 1,20,000 | |
| Sales (Net) | | 10,00,000 |
| Salaries | 80,000 | |
| Bank overdraft | | 2,00,000 |
| 10% debentures (issued on 1st April, 2016) | | 1,00,000 |
| Equity share capital – shares of Rs. 100 each (fully paid) | | 2,00,000 |
| Preference share capital – 1,000; 6% shares of Rs. 100 each (fully paid) | | 1,00,000 |
| | **16,00,000** | **16,00,000** |

**Additional information**

(i) Equity dividend @ 10% declared on paid up capital.
(ii) Dividend on the preference share capital paid in full.
(iii) Rs. 2,00,000 transferred to general reserve.

**Solution**

**Statement of Profit and Loss**
**for the year ending 31st March, 2017**

| Particulars | Note No. | Amount (Rs.) |
|---|---|---|
| **I. Income** | | |
| Revenue from operations (Sales) | | 10,00,000 |
| **Total** | | 10,00,000 |
| **II. Expenses** | | |
| Cost of materials consumed (Adjusted purchase) | | 4,00,000 |
| Employees benefit expenses | 1 | 2,00,000 |
| Finance cost | | 10,000 |
| Depreciation and amortisation | | 16,000 |
| **Total** | | 6,26,000 |
| Profit before tax (I-II) | | **3,74,000** |

Notes to Accounts

| Particulars | Amount Rs. | Amount Rs. |
|---|---|---|
| Employee Benefit Expenses | | |
| (i) Wages | 1,20,000 | |
| (ii) Salary | 80,000 | 2,00,000 |

## 3.5 Uses and Importance of Financial Statements

The users of financial statements include management, investors, shareholders, creditors, government, bankers, employees and public at large. Financial statements provide the necessary information about the performance of the management to these parties interested in the organisation and help in taking appropriate economic decisions. It may be noted that the financial statements constitute an integral part of the annual report of the company in addition to the directors report, auditors report, corporate governance report, and management discussion and analysis.

The various uses and importance of financial statements are as follows:

1. *Report on stewardship function:* Financial statements report the performance of the management to the shareholders. The gaps between the management performance and ownership expectations can be understood with the help of financial statements.

2. *Basis for fiscal policies:* The fiscal policies, particularly taxation policies of the government, are related with the financial performance of corporate undertakings. The financial statements provide basic input for industrial, taxation and other economic policies of the government.
3. *Basis for granting of credit:* Corporate undertakings have to borrow funds from banks and other financial institutions for different purposes. Credit granting institutions take decisions based on the financial performance of the undertakings. Thus, financial statements form the basis for granting of credit.
4. *Basis for prospective investors:* The investors include both short-term and long-term investors. Their prime considerations in their investment decisions are security and liquidity of their investment with reasonable profitability. Financial statements help the investors to assess long-term and short-term solvency as well as the profitability of the concern.
5. *Guide to the value of the investment already made:* Shareholders of companies are interested in knowing the status, safety and return on their investment. They may also need information to take decision about continuation or discontinuation of their investment in the business. Financial statements provide information to the shareholders in taking such important decisions.
6. *Aids trade associations in helping their members:* Trade associations may analyse the financial statements for the purpose of providing service and protection to their members. They may develop standard ratios and design uniform system of accounts.
7. *Helps stock exchanges:* Financial statements help the stock exchanges to understand the extent of transparency in reporting on financial performance and enables them to call for required information to protect the interest of investors. The financial statements enable the Stock brokers to judge the financial position of different concerns and take decisions about the prices to be quoted.

## 3.6 Limitations of Financial Statements

Though utmost care is taken in the preparation of the financial statements and provide detailed information to the users, they suffer from the following limitations:

1. *Do not reflect current situation:* Financial statements are prepared on the basis of historical cost. Since the purchasing power of money is changing, the values of assets and liabilities shown in financial statement do not reflect current market situation.
2. *Assets may not realise:* Accounting is done on the basis of certain conventions. Some of the assets may not realise the stated values, if

the liquidation is forced on the company. Assets shown in the balance sheet reflect merely unexpired or unamortised cost.

3. *Bias:* Financial statements are the outcome of recorded facts, accounting concepts and conventions used and personal judgements made in different situations by the accountants. Hence, bias may be observed in the results, and the financial position depicted in financial statements may not be realistic.
4. *Aggregate information:* Financial statements show aggregate information but not detailed information. Hence, they may not help the users in decision-making much.
5. *Vital information missing:* Balance sheet does not disclose information relating to loss of markets, and cessation of agreements, which have vital bearing on the enterprise.
6. *No qualitative information:* Financial statements contain only monetary information but not qualitative information like industrial relations, industrial climate, labour relations, quality of work, etc.
7. *They are only interim reports:* Statement of Profit and Loss discloses the profit/loss for a specified period. It does not give an idea about the earning capacity over time similarly, the financial position reflected in the balance sheet is true at that point of time, the likely change on a future date is not depicted.

## *Terms Introduced in the Chapter*

1. Financial Statements
2. Statement of profit and loss
3. Balance Sheet
4. Cost of Material consumed
5. Shareholders Funds

## *Summary*

*Financial Statements:* Financial statements are the end products of accounting process, which reveal the financial results of a specified period and financial position as on a particular date. Financial Statements are prepared and published by corporate undertakings for the benefit of various stakeholders. These statements include Statement of profit and loss and balance sheet. The basic objective of these statements is to provide information required for decision-making by the management as well as other outsiders who are interested in the affairs of the undertaking.

*Balance Sheet:* The balance sheet shows all the assets owned by the concern, all the obligations or liabilities payable to outsiders or creditors and claims of the owners on a particular date. It is one of the important statements depicting the financial position or status or strength of an undertaking.

*Statement of Profit and Loss:* The Statement of profit and loss is prepared for a specific period to determine the operational results of an undertaking. It is a statement of revenue earned and the expenses incurred for earning the revenue. It is a performance report showing the changes in income, expenses, profits and losses as a result of business operations during the year between two balance sheet dates.

*Significance of Financial Statements:* The users of financial statements include Shareholders, Investors, Creditors, Lenders, Customers, Management, Government, etc. Financial statements help all the users in their decision-making process. They provide data about general purpose needs of these members.

*Limitations of Financial Statements:* Financial statements are not free from limitations. They provide only aggregate information to satisfy the general purpose needs of the users. They are technical statements understood by only persons having some accounting knowledge. They reflect historical information but not current situation, which is essential in any decision making. In addition, one can get idea about the organisation's performance in terms of quantitative changes but not in qualitative terms like labour relations, quality of work, employees satisfaction, etc. The financial statements are neither complete nor accurate as the flow of income and expenses are segregated using best judgement apart from accepted concepts. Hence, these statements need proper analysis before their use in decision-making.

## *Questions for Practice*

**Short Answer Questions**

1. State the meaning of financial statements?
2. What are limitations of financial statements?
3. List any three objectives of financial statements?
4. State the importance of financial statements to :
   (i) shareholders
   (ii) creditors
   (iii) government
   (iv) investors

5. How will you disclose the following items in the Balance Sheet of a company;
   (i) Loose tools
   (ii) Uncalled liability on partly paid-up shares
   (iii) Debentures redemption reserve
   (iv) Mastheads and publishing titles
   (v) 10% debentures
   (vi) Proposed dividend
   (vii) Share forfeited account
   (viii) Capital redemtion reserve
   (ix) Mining rights
   (x) Work-in-progress

**Long Answer Questions**

1. Explain the nature of the financial statements.
2. Explain in detail about the significance of the financial statements.
3. Explain the limitations of financial statements.
4. Prepare the format of statement of profit and loss and explain its items.
5. Prepare the format of balance sheet and explain the various elements of balance sheet.
6. Explain how financial statements are useful to the various parties who are interested in the affairs of an undertaking?
7. 'Financial statements reflect a combination of recorded facts, accounting conventions and personal judgements'. Discuss.
8. Explain the process of preparing income statement and balance sheet.

**Numerical Questions**

1. Show the following items in the balance sheet as per the provisions of the companies Act, 2013 in Schedule III:

| Particulars | Rs. | Particulars | Rs. |
|---|---|---|---|
| Preliminary Expenses | 2,40,000 | Goodwill | 30,000 |
| Discount on issue of shares | 20,000 | Loose tools | 12,000 |
| 10% Debentures | 2,00,000 | Motor Vehicles | 4,75,000 |
| Stock in trade | 1,40,000 | Provision for tax | 16,000 |
| Cash at bank | 1,35,000 | | |
| Bills receivable | 1,20,000 | | |

2. On 1 April, 2017, Jumbo Ltd., issued 10,000; 12% debentures of Rs. 100 each a discount of 20%, redeemable after 5 years. The company decided to write-off discount on issue of such debentures over the life time of the Debentures. Show the items in the balance sheet of the company immediately after the issue of these debentures.

3. From the following information prepare the balance sheet of Gitanjali Ltd.

   Inventories Rs. 14,00,000; Equity Share Capital Rs. 20,00,000; Plant and Machinery Rs. 10,00,000; Preference Share Capital Rs. 12,00,000; Debenture Redemption Reserve Rs. 6,00,000; Outstanding Expenses Rs. 3,00,000; Proposed Dividend Rs. 5,00,000; Land and Building Rs. 20,00,000; Current Investments Rs. 8,00,000; Cash Equivalent Rs. 10,00,000; Short term loan from Zaveri Ltd. (A Subsidiary Company of Twilight Ltd.) Rs. 4,00,000; Public Deposits Rs. 12,00,000.

4. From the following information prepare the balance sheet of Jam Ltd.

   Inventories Rs. 7,00,000; Equity Share Capital Rs. 16,00,000; Plant and Machinery Rs. 8,00,000; Preference Share Capital Rs. 6,00,000; General Reserves Rs. 6,00,000; Bills payable Rs. 1,50,000; Provision for taxation Rs. 2,50,000; Land and Building Rs. 16,00,000; Non-current Investments Rs. 10,00,000; Cash at Bank Rs. 5,00,000; Creditors Rs. 2,00,000; 12% Debentures Rs. 12,00,000.

5. Prepare the balance sheet of Jyoti Ltd., as at March 31, 2017 from the following information.

   Building Rs. 10,00,000; Investments in the shares of Metro Tyers Ltd. Rs. 3,00,000; Stores & Spares Rs. 1,00,000; Discount on issue of 10% debentures Rs. 10,000; Statement of Profit and Loss (Dr.) Rs. 90,000; 5,00,000 Equity Shares of Rs. 20 each fully paid-up; Capital Redemption Reserve Rs. 1,00,000; 10% Debentures Rs. 3,00,000; Unpaid dividends Rs. 90,000; Share options outstanding account Rs. 10,000.

6. Brinda Ltd., has furnished the following information:

   (a) 25,000, 10% debentures of Rs.100 each;

   (b) Bank Loan of Rs.10,00,000 repayable after 5 years;

   (c) Interest on debentures is yet to be paid.

Show the above items in the balance sheet of the company as at March 31, 2017.

7. Prepare a balance sheet of Black Swan Ltd., as at March 31, 2017 from the following information:

| | | Rs. |
|---|---|---|
| General Reserve | : | 3,000 |
| 10% Debentures | : | 3,000 |
| Balance in Statement of Profit and Loss | : | 1,200 |
| Depreciation on fixed assets | : | 700 |
| Gross Block | : | 9,000 |
| Current Liabilities | : | 2,500 |
| Preliminary Expenses | : | 300 |
| 6% Preference Share Capital | : | 5,000 |
| Cash & Cash Equivalents | : | 6,100 |

# Analysis of Financial Statements

4

You have learnt about the financial statements (Income Statement and Balance Sheet) of companies. Basically, these are summarised financial reports which provide the operating results and financial position of companies, and the detailed information contained therein is useful for assessing the operational efficiency and financial soundness of a company. This requires proper analysis and interpretation of such information for which a number of techniques (tools) have been developed by financial experts. In this chapter we will have an overview of these techniques.

**Learning Objectives**

*After studying this chapter, you will be able to :*

- *explain the nature and significance of financial analysis;*
- *identify the objectives of financial analysis;*
- *describe the various tools of financial analysis;*
- *state the limitations of financial analysis;*
- *prepare comparative and common size statements and interpret the data given therein; and*
- *calculate the trend percentages and interpret them.*

## 4.1 Meaning of Analysis of Financial Statements

The process of critical evaluation of the financial information contained in the financial statements in order to understand and make decisions regarding the operations of the firm is called 'Financial Statement Analysis'. It is basically a study of relationship among various financial facts and figures as given in a set of financial statements, and the interpretation thereof to gain an insight into the profitability and operational efficiency of the firm to assess its financial health and future prospects.

The term 'financial analysis' includes both 'analysis and interpretation'. The term analysis means simplification of financial data by methodical classification given in the financial statements. Interpretation means explaining the meaning and significance of the data. These two are complimentary to each other. Analysis is useless without interpretation, and interpretation without analysis is difficult or even impossible.

Financial statement analysis is a judgemental process which aims to estimate current and past financial positions and the results of the operation of an enterprise, with primary objective of determining the best possible estimates and predictions about the future conditions. It essentially involves regrouping and analysis of information provided by financial statements to establish relationships and throw light on the points of strengths and weaknesses of a business enterprise, which can be useful in decision-making involving comparison with other firms (cross sectional analysis) and with firms' own performance, over a time period (time series analysis).

## 4.2 Significance of Analysis of Financial Statements

Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the various items of the balance sheet and the statement of profit and loss. Financial analysis can be undertaken by management of the firm, or by parties outside the firm, viz., owners, trade creditors, lenders, investors, labour unions, analysts and others. The nature of analysis will differ depending on the purpose of the analyst. A technique frequently used by an analyst need not necessarily serve the purpose of other analysts because of the difference in the interests of the analysts. Financial analysis is useful and significant to different users in the following ways:

(a) *Finance manager:* Financial analysis focusses on the facts and relationships related to managerial performance, corporate efficiency, financial strengths and weaknesses and creditworthiness of the company. A finance manager must be well-equipped with the different tools of analysis to make rational decisions for the firm. The tools for analysis help in studying accounting data so as to determine the continuity of the operating policies, investment value of the business, credit ratings and testing the efficiency of operations. The techniques are equally important in the area of financial control, enabling the finance manager to make constant reviews of the actual financial operations of the firm to analyse the causes of major deviations, which may help in corrective action wherever indicated.

(b) *Top management:* The importance of financial analysis is not limited to the finance manager alone. It has a broad scope which includes top management in general and other functional managers. Management of the firm would be interested in every aspect of the financial analysis. It is their overall responsibility to see that the resources of the firm are used most efficiently and that the firm's financial condition is sound. Financial analysis helps the management in measuring the success of the company's operations, appraising the individual's performance and evaluating the system of internal control.

(c) *Trade payables:* Trade payables, through an analysis of financial statements, appraises not only the ability of the company to meet its short-term obligations, but also judges the probability of its continued ability to meet all its financial obligations in future. Trade payables are particularly interested in the firm's ability to meet their claims over a very short period of time. Their analysis will, therefore, evaluate the firm's liquidity position.

(d) *Lenders:* Suppliers of long-term debt are concerned with the firm's long-term solvency and survival. They analyse the firm's profitability over a period of time, its ability to generate cash, to be able to pay interest and repay the principal and the relationship between various sources of funds (capital structure relationships). Long-term lenders analyse the historical financial statements to assess its future solvency and profitability.

(e) *Investors:* Investors, who have invested their money in the firm's shares, are interested about the firm's earnings. As such, they concentrate on the analysis of the firm's present and future profitability. They are also interested in the firm's capital structure to ascertain its influences on firm's earning and risk. They also evaluate the efficiency of the management and determine whether a change is needed or not. However, in some large companies, the shareholders' interest is limited to decide whether to buy, sell or hold the shares.

(f) *Labour unions:* Labour unions analyse the financial statements to assess whether it can presently afford a wage increase and whether it can absorb a wage increase through increased productivity or by raising the prices.

(g) *Others:* The economists, researchers, etc., analyse the financial statements to study the present business and economic conditions. The government agencies need it for price regulations, taxation and other similar purposes.

## 4.3 Objectives of Analysis of Financial Statements

Analysis of financial statements reveals important facts concerning managerial performance and the efficiency of the firm. Broadly speaking, the objectives of the analysis are to apprehend the information contained in financial statements with a view to know the weaknesses and strengths of the firm and to make a forecast about the future prospects of the firm thereby, enabling the analysts to take decisions regarding the operation of, and further investment in the firm. To be more specific, the analysis is undertaken to serve the following purposes (objectives):

- to assess the current profitability and operational efficiency of the firm as a whole as well as its different departments so as to judge the financial health of the firm.
- to ascertain the relative importance of different components of the financial position of the firm.
- to identify the reasons for change in the profitability/financial position of the firm.
- to judge the ability of the firm to repay its debt and assessing the short-term as well as the long-term liquidity position of the firm.

Through the analysis of financial statements of various firms, an economist can judge the extent of concentration of economic power and pitfalls in the financial policies pursued. The analysis also provides the basis for many governmental actions relating to licensing, controls, fixing of prices, ceiling on profits, dividend freeze, tax subsidy and other concessions to the corporate sector.

## 4.4 Tools of Analysis of Financial Statements

The most commonly used techniques of financial analysis are as follows:

1. *Comparative Statements:* These are the statements showing the profitability and financial position of a firm for different periods of time in a comparative form to give an idea about the position of two or more periods. It usually applies to the two important financial statements, namely, balance sheet and statement of profit and loss prepared in a comparative form. The financial data will be comparative only when same accounting principles are used in preparing these statements. If this is not the case, the deviation in the use of accounting principles should be mentioned as a footnote. Comparative figures indicate the trend and direction of financial position and operating results. This analysis is also known as 'horizontal analysis'.

2. *Common Size Statements:* These are the statements which indicate the relationship of different items of a financial statement with a common item by expressing each item as a percentage of that common item. The percentage thus calculated can be easily compared with the results of corresponding percentages of the previous year or of some other firms, as the numbers are brought to common base. Such statements also allow an analyst to compare the operating and financing characteristics of two companies of different sizes in the same industry. Thus, common size statements are useful, both, in intra-firm comparisons over different years and also in making inter-firm comparisons for the same year or for several years. This analysis is also known as 'Vertical analysis'.

3. *Trend Analysis:* It is a technique of studying the operational results and financial position over a series of years. Using the previous years' data of a business enterprise, trend analysis can be done to observe the percentage changes over time in the selected data. The trend percentage is the percentage relationship, in which each item of different years bear to the same item in the base year. Trend analysis is important because, with its long run view, it may point to basic changes in the nature of the business. By looking at a trend in a particular ratio, one may find whether the ratio is falling, rising or remaining relatively constant. From this observation, a problem is detected or the sign of good or poor management is detected.

4. *Ratio Analysis:* It describes the significant relationship which exists between various items of a balance sheet and a statement of profit and loss of a firm. As a technique of financial analysis, accounting ratios measure the comparative significance of the individual items of the income and position statements. It is possible to assess the profitability, solvency and efficiency of an enterprise through the technique of ratio analysis.

5. *Cash Flow Analysis:* It refers to the analysis of actual movement of cash into and out of an organisation. The flow of cash into the business is called as cash inflow or positive cash flow and the flow of cash out of the firm is called as cash outflow or a negative cash flow. The difference between the inflow and outflow of cash is the net cash flow. Cash flow statement is prepared to project the manner in which the cash has been received and has been utilised during an accounting year as it shows the sources of cash receipts and also the purposes for which payments are made. Thus, it summarises the causes for the changes in cash position of a business enterprise between dates of two balance sheets.

In this chapter, we shall have a brief idea about the first three techniques, viz., comparative statements, common size statements and trend analysis. The ratio analysis and cash flow analysis is covered in detail in Chapters 5 and 6 respectively.

**Test your Understanding – I**

Fill in the blanks with appropriate word(s):

1. Analysis simply means————data.
2. Interpretation means ————data.
3. Comparative analysis is also known as ———————— analysis.
4. Common size analysis is also known as ———————— analysis.
5. The analysis of actual movement of money inflow and outflow in an organisation is called——————— analysis.

## 4.5 Comparative Statements

As stated earlier, these statements refer to the statement of profit and loss and the balance sheet prepared by providing columns for the figures for both the current year as well as for the previous year and for the changes during the year, both in absolute and relative terms. As a result, it is possible to find out not only the balances of accounts as on different dates and summaries of different operational activities of different periods, but also the extent of their increase or decrease between these dates. The figures in the comparative statements can be used for identifying the direction of changes and also the trends in different indicators of performance of an organisation.

The following steps may be followed to prepare the comparative statements:

*Step 1 :* List out absolute figures in rupees relating to two points of time (as shown in columns 2 and 3 of Exhibit 4.1).

*Step 2 :* Find out change in absolute figures by subtracting the first year (Col.2) from the second year (Col.3) and indicate the change as increase (+) or decrease (–) and put it in column 4.

*Step 3 :* Preferably, also calculate the percentage change as follows and put it in column 5.

$$\frac{\text{Absolute Increase or Decrease (Col.4)}}{\text{First year absolute figure (Col.2)}} \times 100$$

| Particulars | First Year | Second Year | Absolute Increase (+) or Decrease (–) | Percentage Increase (+) or Decrease (–) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | **Rs.** | **Rs.** | **Rs.** | **%.** |
| | | | | |

**Exhibit. 4.1**

### *Illustration 1*

Convert the following statement of profit and loss into the comparative statement of profit and loss of BCR Co. Ltd.:

| *Particulars* | *Note No.* | *2015-16 Rs.* | *2016-17 Rs.* |
|---|---|---|---|
| (i) Revenue from operations | | 60,00,000 | 75,00,000 |
| (ii) Other incomes | | 1,50,000 | 1,20,000 |
| (iii) Expenses | | 44,00,000 | 50,60,000 |
| (iv) Income tax | | 35% | 40% |

### *Solution:*

Comparative statement of profit and loss for the year ended March 31, 2016 and 2017:

| *Particulars* | *2015-16* | *2016-17* | *Absolute Increase (+) or Decrease (–)* | *Percentage Increase (+) or Decrease (–)* |
|---|---|---|---|---|
| | **Rs.** | **Rs.** | **Rs.** | **%** |
| I. Revenue from operations | 60,00,000 | 75,00,000 | 15,00,000 | 25.00 |
| II. Add: Other incomes | 1,50,000 | 1,20,000 | (30,000) | (20.00) |
| III. Total Revenue I+II | **61,50,000** | **76,20,000** | **14,70,000** | **23.90** |
| IV. Less: Expenses | 44,00,000 | 50,60,000 | 6,60,000 | 15.00 |
| Profit before tax | **17,50,000** | **25,60,000** | **8,10,000** | **46.29** |
| V. Less: Tax | 6,12,500 | 10,24,000 | 4,11,500 | 67.18 |
| Profit after tax | **11,37,500** | **15,36,000** | **3,98,500** | **35.03** |

### *Illustration 2*

From the following statement of profit and loss of Madhu Co. Ltd., prepare comparative statement of profit and loss for the year ended March 31, 2016 and 2017:

| *Particulars* | *Note No.* | *2015-16 Rs.* | *2016-17 Rs.* |
|---|---|---|---|
| Revenue from operations | | 16,00,000 | 20,00,000 |
| Employee benefit expenses | | 8,00,000 | 10,00,000 |
| Other expenses | | 2,00,000 | 1,00,000 |
| Tax rate 40 % | | | |

**Solution:**

**Comparative statement of profit and loss of Madhu Co. Limited for the year ended March 31, 2016 and 2017:**

| *Particulars* | *2015-16* | *2016-17* | *Absolute Increase (+) or Decrease (–)* | *Percentage Increase (+) or Decrease (–)* |
|---|---|---|---|---|
| | **Rs.** | **Rs.** | **Rs.** | **%** |
| I. Revenue from operations | **16,00,000** | **20,00,000** | **4,00,000** | **25** |
| II. Less: Expenses | | | | |
| a) Employee benefit expenses | 8,00,000 | 10,00,000 | 2,00,000 | 25 |
| b) Other expenses | 2,00,000 | 1,00,000 | (1,00,000) | (50) |
| Profit before tax | **6,00,000** | **9,00,000** | **3,00,000** | **50** |
| III. Less tax @ 40% | 2,40,000 | 3,60,000 | 1,20,000 | 50 |
| Profit after tax | **3,60,000** | **5,40,000** | **1,80,000** | **50** |

***Do it yourself***

From the following particulars, prepare comparative statement of profit and loss of Narang Colours Ltd. for the year ended March 31, 2016 and 2017:

| *Particulars* | *Note No.* | *2016-17* | *2015-16* |
|---|---|---|---|
| 1. Revenue from operations | | 40,00,000 | 35,00,000 |
| 2. Other income | | 50,000 | 50,000 |
| 3. Cost of material consumed | | 15,00,000 | 18,00,000 |
| 4. Changes in inventories of finished goods | | 10,000 | (15,000) |
| 5. Employee benefit expenses | | 2,40,000 | 2,40,000 |
| 6. Depreciation and amortisation | | 25,000 | 22,500 |
| 7. Other expenses | | 2,66,000 | 3,02,000 |
| 8. Profit | | 20,09,000 | 14.27,300 |

Notes to Accounts

| *Particulars* | *2016-17* | *2015-16* |
|---|---|---|
| 1. Other expenses | | |
| i) Power and fuel | 36,000 | 40,000 |
| ii) Carriage outwards | 7,500 | 9,500 |
| iii) License fees | 2,500 | 2,500 |
| iv) Selling and distribution | 1,70,000 | 1,90,000 |
| v) Provision of tax | 50,000 | 60,000 |
| | **2,66,000** | **3,02,000** |

### *Illustration 3*

The following are the Balance Sheets of J. Ltd. as at March 31, 2016 and 2017. Prepare a Comparative balance sheet.

| *Particulars* | *Note No.* | *March 31, 2017 (Rs.)* | *March 31, 2016 (Rs.)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | 20,00,000 | 15,00,000 |
| b) Reserve and surplus | | 3,00,000 | 4,00,000 |
| 2. Non-current Liabilities | | | |
| Long-term borrowings | | 9,00,000 | 6,00,000 |
| 3. Current liabilities | | | |
| Trade payables | | 3,00,000 | 2,00,000 |
| **Total** | | **35,00,000** | **27,00,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | | | |
| - Tangible assets | | 20,00,000 | 15,00,000 |
| - Intangible assets | | 9,00,000 | 6,00,000 |
| 2. Current assets | | | |
| - Inventories | | 3,00,000 | 4,00,000 |
| - Cash and cash equivalents | | 3,00,000 | 2,00,000 |
| **Total** | | **35,00,000** | **27,00,000** |

### *Solution:*

Comparative Balance Sheet of J. Limited
as at March 31, 2016 and March 2017:

(Rs. in Lakhs)

| *Particulars* | *March 31, 2016* | *March 31, 2017* | *Absolute Change* | *Percentage Change* |
|---|---|---|---|---|
| **I. Equity and Liabilities** | | | | |
| 1. Shareholders' Funds | | | | |
| a) Share capital | 15 | 20 | 05 | 33.33 |
| b) Reserve and surplus | 04 | 03 | (01) | (25) |
| 2. Non-current Liabilities | | | | |
| a) Long-term borrowings | 06 | 09 | 03 | 50 |
| 3. Current liabilities | | | | |
| a) Trade payables | 02 | 03 | 01 | 50 |
| **Total** | **27** | **35** | **08** | **29.63** |

| | | | | |
|---|---|---|---|---|
| **II. Assets** | | | | |
| 1. Non-current assets | | | | |
| a) Fixed assets | | | | |
| - Tangible assets | 15 | 20 | 05 | 33.33 |
| - Intangible assets | 06 | 09 | 03 | 50 |
| b) Current assets | | | | |
| - Inventories | 04 | 03 | (01) | (25) |
| - Cash and cash equivalents | 02 | 03 | 01 | 50 |
| **Total** | **27** | **35** | **08** | **29.63** |

***Illustration 4***

From the following Balance Sheets of Amrit Limited as at March 31, 2016 and 2017, prepare a comparative balance sheet:

| *Particulars* | *Note No.* | *March 31, 2017 (Rs.)* | *March 31, 2016 (Rs.)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | 20,00,000 | 15,00,000 |
| b) Reserve and surplus | | 13,00,000 | 14,00,000 |
| 2. Non-current Liabilities | | | |
| Long-term borrowings | | 19,00,000 | 16,00,000 |
| 3. Current liabilities | | | |
| Trade payables | | 3,00,000 | 2,00,000 |
| **Total** | | **55,00,000** | **47,00,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | | | |
| - Tangible assets | | 20,00,000 | 15,00,000 |
| - Intangible assets | | 19,00,000 | 16,00,000 |
| 2. Current assets | | | |
| - Inventories | | 13,00,000 | 14,00,000 |
| - Cash and Cash Equivalents | | 3,00,000 | 2,00,000 |
| **Total** | | **55,00,000** | **47,00,000** |

**Solution:**

**Comparative Balance Sheet of Amrit Limited**
**as at March 31, 2016 and March 31, 2017**

(Rs. in Lakhs)

| Particulars | March 31, 2016 Rs. | March 31, 2017 Rs. | Absolute Increase (+) or Decrease (–) Rs. | Percentage Increase (+) or Decrease (–) % |
|---|---|---|---|---|
| **I. Equity and Liabilities** | | | | |
| 1) Shareholders' funds | | | | |
| a) Share capital | 15 | 20 | 5 | 33.33 |
| b) Reserves and surplus | 14 | 13 | (1) | (7.14) |
| 2) Non-current liabilities | | | | |
| Long-term borrowings | 16 | 19 | 3 | 18.75 |
| 3) Current liabilities | | | | |
| Trade payables | 2 | 3 | 1 | 50 |
| **Total** | **47** | **55** | **8** | **17.02** |
| **II. Assets** | | | | |
| 1) Non-current assets | | | | |
| Fixed assets | | | | |
| a) Tangible assets | 15 | 20 | 5 | 33.33 |
| b) Intangible assets | 16 | 19 | 3 | 18.75 |
| 2) Current assets | | | | |
| a) Inventories | 14 | 13 | (1) | (7.14) |
| b) Cash and Cash Equivalents | 2 | 3 | 1 | 50 |
| **Total** | **47** | **55** | **8** | **17.02** |

***Do it yourself***

From the Balance Sheets for the year ended March 31, 2016 and 2017, prepare the comparative Balance Sheet of Omega Chemicals Ltd.:

Rs. in Lakhs

| Particulars | Note No. | 2017 (Rs.) | 2016 (Rs.) |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1) Shareholders' Fund | | | |
| a) Share capital | | 5 | 10 |
| b) Reserve and surplus | | 3 | 2 |
| 2) Non-current liabilities | | | |
| Long-term borrowings | | 5 | 8 |
| 3) Current liabilities | | | |
| Trade Payable | | 2 | 4 |
| **Total** | | **15** | **24** |

| | | | |
|---|---|---|---|
| **II. Assets** | | | |
| 1) Non-current assets | | | |
| a) Fixed assets | | | |
| - Tangible assets | | 14 | 8 |
| - Intangible assets | | 3 | 2 |
| 2) Current assets | | | |
| a) Inventories | | 5 | 4 |
| b) Cash and cash equivalents | | 2 | 1 |
| **Total** | | **24** | **15** |

## 4.6 Common Size Statement

Common Size Statement, also known as component percentage statement, is a financial tool for studying the key changes and trends in the financial position and operational result of a company. Here, each item in the statement is stated as a percentage of the aggregate, of which that item is a part. For example, a common size balance sheet shows the percentage of each asset to the total assets, and that of each liability to the total liabilities. Similarly, in the common size statement of profit and loss, the items of expenditure are shown as a percentage of the net revenue from operations. If such a statement is prepared for successive periods, it shows the changes of the respective percentages over a period of time.

Common size analysis is of immense use for comparing enterprises which differ substantially in size as it provides an insight into the structure of financial statements. Inter-firm comparison or comparison of the company's position with the related industry as a whole is possible with the help of common size statement analysis.

The following procedure may be adopted for preparing the common size statements.

1. List out absolute figures in rupees at two points of time, say year 1, and year 2 (Column 2 & 4 of Exhibit 4.2).
2. Choose a common base (as 100). For example, revenue from operations may be taken as base (100) in case of statement of profit and loss and total assets or total liabilities (100) in case of balance sheet.
3. For all items of Col. 2 and 3 work out the percentage of that total. Column 4 and 5 shows these percentages in Exhibit 4.2.

**Common Size Statement**

| Particulars | Year one | Year two | Percentage of year 1 | Percentage of year 2 |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| | | | | |

**Exhibit 4.2**

### *Illustration 5*

From the following information, prepare a Common size Income Statement for the year ended March 31, 2016 and March 31, 2017:

| *Particulars* | *2016-17* Rs. | *2015-16* Rs. |
|---|---|---|
| Net sales | 18,00,000 | 25,00,000 |
| Cost of good sold | 10,00,000 | 12,00,000 |
| Operating expenses | 80,000 | 1,20,000 |
| Non-operating expenses | 12,000 | 15,000 |
| Depreciation | 20,000 | 40,000 |
| Wages | 10,000 | 20,000 |

### *Solution:*

**Common Size Income Statement**
**for the year ended March 31, 2016 and March 31, 2017**

| *Particulars* | *Absolute Amounts* | | *Percentage of Net Sales* | |
|---|---|---|---|---|
| | *2015-16* *Rs.* | *2016-17* *Rs.* | *2015-16* *(%)* | *2016-17* *(%)* |
| Net Sales | 25,00,000 | 18,00,000 | 100 | 100 |
| (Less) Cost of goods Sold* | 12,00,000 | 10,00,000 | 48 | 55.56 |
| **Gross Profit** | **13,00,000** | **8,00,000** | **52** | **44.44** |
| (Less) Operating Expenses** | 1,20,000 | 80,000 | 4.80 | 4.44 |
| **Operating Income** | **11,80,000** | **7,20,000** | **47.20** | **40** |
| (Less) Non-Operating expenses | 15,000 | 12,000 | 0.60 | 0.67 |
| **Profit** | **11,65,000** | **7,08,000** | **46.60** | **39.33** |

* Wages is the part of cost of goods sold;
** Depreciation is the part of operating expenses.

### *Illustration 6*

From the following information, prepare Common size statement of profit and loss for the year ended March 31, 2016 and March 31, 2017:

| *Particulars* | *2015-16* Rs. | *2016-17* Rs. |
|---|---|---|
| Revenue from operations | 25,00,000 | 20,00,000 |
| Other income | 3,25,000 | 2,50,000 |

| | | |
|---|---|---|
| Employee benefit expenses | 8,25,000 | 4,50,000 |
| Other expenses | 2,00,000 | 1,00,000 |
| Income tax (% of the profit before tax) | 30% | 20% |

***Solution:***

**Common size statement of Profit and Loss for the year ended March 31, 2016 and March 31, 2017:**

| *Particulars* | *Absolute Amounts* | | *Percentage of Net Revenue from operations* | |
|---|---|---|---|---|
| | *2015-16* | *2016-17* | *2015-16* | *2016-17* |
| | *Rs.* | *Rs.* | *(%)* | *(%)* |
| Revenue from Operations | 25,00,000 | 20,00,000 | 100 | 100 |
| (Add) Other income | 3,25,000 | 2,50,000 | 13 | 12.5 |
| Total revenue | 28,25,000 | 22,50,000 | 113 | 112.5 |
| (Less) expenses: | | | | |
| a) Employee benefit expenses | 8,25,000 | 4,50,000 | 33 | 22.5 |
| b) Other expenses | 2,00,000 | 1,00,000 | 8 | 5 |
| Profit before tax | 18,00,000 | 17,00,000 | 72 | 85 |
| (Less) taxes | 5,40,000 | 3,40,000 | 21.6 | 17 |
| Profit after tax | 12,60,000 | 13,60,000 | 50.4 | 68 |

***Illustration 7***

Prepare common size Balance Sheet of XRI Ltd. from the following information:

| *Particulars* | *Note No.* | *March 31, 2016* | *March 31, 2017* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Fund | | | |
| a) Share capital | | 15,00,000 | 12,00,000 |
| b) Reserves and surplus | | 5,00,000 | 5,00,000 |
| 2. Non-current liabilities | | | |
| Long-term borrowings | | 6,00,000 | 5,00,000 |
| 3. Current liabilities | | | |
| Trade Payable | | 15,50,000 | 10,50,000 |
| **Total** | | **41,50,000** | **32,50,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | | | |
| - Tangible asset | | | |
| Plant & machinery | | 14,00,000 | 8,00,000 |
| - Intangible assets | | | |
| Goodwill | | 16,00,000 | 12,00,000 |
| b) Non-current investments | | 10,00,000 | 10,00,000 |
| 2. Current assets | | | |
| Inventories | | 1,50,000 | 2,50,000 |
| **Total** | | **41,50,000** | **32,50,000** |

***Solution:***

**Common size Balace Sheet**
**as at March 31, 2016 and March 31, 2017:**

| *Particulars* | *Absolute Amounts* | | *Percentage of Total Assets* | |
|---|---|---|---|---|
| | *31.03.2016* | *31.03.2017* | *31.03.2016* | *31.03.2017* |
| | *Rs.* | *Rs.* | *(%)* | *(%)* |
| **I. Equity and Liabilities** | | | | |
| 1. Shareholders fund | | | | |
| a) Share capital | 15,00,000 | 12,00,000 | 36.14 | 36.93 |
| b) Reserve and surplus | 5,00,000 | 5,00,000 | 12.05 | 15.38 |
| 2. Non-current liabilities | | | | |
| Long-term borrowings | 6,00,000 | 5,00,000 | 14.46 | 15.38 |
| 3. Current liabilities | | | | |
| Trade payables | 15,50,000 | 10,50,000 | 37.35 | 32.31 |
| **Total** | **41,50,000** | **32,50,000** | **100** | **100** |
| **II. Assets** | | | | |
| 1. Non-current assets | | | | |
| a) Fixed assets | | | | |
| - Tangible asset | | | | |
| Plant & machinery | 14,00,000 | 8,00,000 | 33.73 | 24.62 |
| - Intangible assets | | | | |
| Goodwill | 16,00,000 | 12,00,000 | 38.55 | 36.92 |
| Non-current investments | 10,00,000 | 10,00,000 | 24.10 | 30.77 |
| 2. Current assets | | | | |
| Inventories | 1,50,000 | 2,50,000 | 3.62 | 7.69 |
| **Total** | **41,50,000** | **32,50,000** | **100** | **100** |

***Do it yourself***

Prepare common size balance sheet of Raj Co. Ltd. as at March 31, 2016 and March 31, 2017 from the given information:

| *Particulars* | *2017* | *2016* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| 1. Shareholders fund | | |
| a) Share capital | 20,00,000 | 15,00,000 |
| b) Reserve and surplus | 3,00,000 | 4,00,000 |
| 2. Non-current liabilities | | |
| Long-term borrowings | 9,00,000 | 6,00,000 |
| 3. Current liabilities | | |
| Trade payables | 3,00,000 | 2,00,000 |
| **Total** | **35,00,000** | **27,00,000** |

| | | |
|---|---|---|
| **II. Assets** | | |
| 1. Non-current assets | | |
| a) Fixed assets | | |
| - Tangible assets | 20,00,000 | 15,00,000 |
| - Intangible assets | 9,00,000 | 6,00,000 |
| b) Current assets | | |
| - Inventories | 3,00,000 | 4,00,000 |
| - Cash and cash equivalents | 3,00,000 | 2,00,000 |
| **Total** | **35,00,000** | **27,00,000** |

**Test your Understanding – II**

**Choose the right answer :**

1. The financial statements of a business enterprise include:
   (a) Balance sheet
   (b) Statement of Profit and loss account
   (c) Cash flow statement
   (d) All the above
2. The most commonly used tools for financial analysis are:
   (a) Horizontal analysis
   (b) Vertical analysis
   (c) Ratio analysis
   (d) All the above
3. An Annual Report is issued by a company to its:
   (a) Directors
   (b) Auditors
   (c) Shareholders
   (d) Management
4. Balance Sheet provides information about financial position of the enterprise:
   (a) At a point in time
   (b) Over a period of time
   (c) For a period of time
   (d) None of the above
5. Comparative statements are also known as:
   (a) Dynamic analysis
   (b) Horizontal analysis
   (c) Vertical analysis
   (d) External analysis

**Test your Understanding – III**

State whether each of the following is True or False :

(a) The financial statements of a business enterprise include cash flow statement.

(b) Comparative statements are the form of horizontal analysis.

(c) Common size statements and financial ratios are the two tools employed in vertical analysis.

(d) Ratio analysis establishes relationship between two financial statements.

(e) Ratio analysis is a tool for analysing the financial statements of any enterprise.

(f) Financial analysis is used only by the creditors.

(g) Statement of profit and loss account shows the operating performance of an enterprise for a period of time.

(h) Financial analysis helps an analyst to arrive at a decision.

(i) Cash Flow Statement is a tool of financial statement analysis.

(j) In a Common size statement each item is expressed as a percentage of some common base.

## 4.7 Limitations of Financial Analysis

Though financial analysis is quite helpful in determining financial strengths and weaknesses of a firm, it is based on the information available in financial statements. As such, the financial analysis also suffers from various limitations of financial statements. Hence, the analyst must be conscious of the impact of price level changes, window dressing of financial statements, changes in accounting policies of a firm, accounting concepts and conventions, personal judgement, etc. Some other limitations of financial analysis are:

1. Financial analysis does not consider price level changes.
2. Financial analysis may be misleading without the knowledge of the changes in accounting procedure followed by a firm.
3. Financial analysis is just a study of reports of the company.
4. Monetary information alone is considered in financial analysis while non-monetary aspects are ignored.
5. The financial statements are prepared on the basis of accounting concept, as such, it does not reflect the current position.

## *Terms Introduced in the Chapter*

| | | | |
|---|---|---|---|
| 1. | Financial Analysis | 2. | Common Size Statements |
| 3. | Comparative Statements | 4. | Trend Analysis |
| 5. | Ratio Analysis | 6. | Cash Flow Statement |
| 7. | Intra Firm Comparison | 8. | Inter Firm Comparison |
| 9. | Horizontal Analysis | 10. | Vertical Analysis |

## *Summary*

*Major Parts of an Annual Report*

An annual report contains basic financial statements, viz., Balance Sheet, Statement of Profit and Loss and Cash Flow Statement. It also carries management's discussion of corporate performance of the year under review for futuristic prospects.

*Tools of Financial Analysis*

Commonly used tools of financial analysis are: Comparative statements, Common size statement, trend analysis, ratio analysis, and cash flow analysis.

*Comparative Statement*

Comparative statement shows changes in all items of financial statements in absolute and percentage terms over a period of time for a firm or between two firms.

*Common Size Statement*

Common size statement expresses all items of a financial statement as a percentage of some common base such as revenue from operations for statement of profit and loss and total assets for balance sheet.

## *Questions for Practice*

### Short Answer Questions

1. List the techniques of Financial Statement Analysis.
2. Distinguish between Vertical and Horizontal Analysis of financial data.
3. State the meaning of Analysis and Interpretation.
4. State the importance of Financial Analysis?
5. What are Comparative Financial Statements?
6. What do you mean by Common Size Statements?

### Long Answer Questions

1. Describe the different techniques of financial analysis and explain the limitations of financial analysis.
2. Explain the usefulness of trend percentages in interpretation of financial performance of a company.
3. What is the importance of comparative statements? Illustrate your answer with particular reference to comparative income statement.
4. What do you understand by analysis and interpretation of financial statements? Discuss its importance.
5. Explain how common size statements are prepared giving an example.

### Numerical Questions

1. Following are the balance sheets of Alpha Ltd., as at March 31, 2016 and 2017:

| *Particulars* | *March 31, 2016* Rs. | *March 31, 2017* Rs. |
|---|---|---|
| **I. Equity and Liabilities** | | |
| Equity share capital | 2,00,000 | 4,00,000 |
| Reserves and surplus | 1,00,000 | 1,50,000 |
| Long-term borrowings | 2,00,000 | 3,00,000 |
| Short-term borrowings | 50,000 | 70,000 |
| Trade payables | 30,000 | 60,000 |
| Short-term provisions | 20,000 | 10,000 |
| Other current liabilities | 20,000 | 30,000 |
| **Total** | **6,20,000** | **10,20,000** |
| **II. Assets** | | |
| Fixed assets | 2,00,000 | 5,00,000 |
| Non-current investments | 1,00,000 | 1,25,000 |
| Current investments | 60,000 | 80,000 |

| | | |
|---|---|---|
| Inventories | 1,35,000 | 1,55,000 |
| Trade receivables | 60,000 | 90,000 |
| Short term loans and advances | 40,000 | 60,000 |
| Cash at bank | 25,000 | 10,000 |
| **Total** | **6,20,000** | **10,20,000** |

You are required to prepare a Comparative Balance Sheet.

2. Following are the balance sheets of Beta Ltd. at March 31, 2016 and 2017:

| *Particulars* | *March 31, 2017 (Rs.)* | *March 31, 2016 (Rs.)* |
|---|---|---|
| **I. Equity and Liabilities** | | |
| Equity share capital | 4,00,000 | 3,00,000 |
| Reserves and surplus | 1,50,000 | 1,00,000 |
| Loan from IDBI | 3,00,000 | 1,00,000 |
| Short-term borrowings | 70,000 | 50,000 |
| Trade payables | 60,000 | 30,000 |
| Short-term provisions | 10,000 | 20,000 |
| Other current liabilities | 1,10,000 | 1,00,000 |
| **Total** | **11,00,000** | **7,00,000** |
| **II. Assets** | | |
| Fixed assets | 4,00,000 | 2,20,000 |
| Non-current investments | 2,25,000 | 1,00,000 |
| Current investments | 80,000 | 60,000 |
| Stock | 1,05,000 | 90,000 |
| Trade receivables | 90,000 | 60,000 |
| Short-term loans and advances | 1,00,000 | 85,000 |
| Cash and cash equivalents | 1,00,000 | 85,000 |
| **Total** | **11,00,000** | **7,00,000** |

3. Prepare Comparative Statement of profit and loss from the following information:

| *Particulars* | *2016-17 (Rs.)* | *2015-16 (Rs.)* |
|---|---|---|
| Freight Outward | 20,000 | 10,000 |
| Wages (office) | 10,000 | 5,000 |
| Manufacturing Expenses | 50,000 | 20,000 |

| | | |
|---|---|---|
| Stock adjustment | (60,000) | 30,000 |
| Cash purchases | 80,000 | 60,000 |
| Credit purchases | 60,000 | 20,000 |
| Returns inward | 8,000 | 4,000 |
| Gross profit | (30,000) | 90,000 |
| Carriage outward | 20,000 | 10,000 |
| Machinery | 3,00,000 | 2,00,000 |
| 10% depreciation on machinery | 10,000 | 5,000 |
| Interest on short-term loans | 20,000 | 20,000 |
| 10% debentures | 20,000 | 10,000 |
| Profit on sale of furniture | 20,000 | 10,000 |
| Loss on sale of office car | 90,000 | 60,000 |
| Tax rate | 40% | 50% |

4. Prepare Comparative Statement of Profit and Loss from the following information:

| *Particulars* | *2015-16 (Rs.)* | *2016-17 (Rs.)* |
|---|---|---|
| Manufacturing expenses | 35,000 | 80,000 |
| Opening stock | 30,000 | 60% of closing stock |
| Sales | 9,60,000 | 4,50,000 |
| Returns outward | 4,000 (out of credit purchase) | 6,000 (out of cash purchase) |
| Closing stock | 150% of opening stock | 1,00,000 |
| Credit purchases | 1,50,000 | 150% of cash purchase |
| Cash purchases | 80% of credit purchases | 40,000 |
| Carriage outward | 10,000 | 30,000 |
| Building | 1,00,000 | 2,00,000 |
| Depreciation on building | 20% | 10% |
| Interest on bank overdraft | 5,000 | - |
| 10% debentures | 2,00,000 | 20,00,000 |
| Profit on sale of copyright | 10,000 | 20,000 |
| Loss on sale of personal car | 10,000 | 20,000 |
| Other operating expenses | 20,000 | 10,000 |
| Tax rate | 50% | 40% |

5. Prepare a Common size statement of profit and loss of Shefali Ltd. with the help of following information:

| *Particulars* | *2015-16* | *2016-17* |
|---|---|---|
| | *(Rs.)* | *(Rs.)* |
| Revenue from operations | 6,00,000 | 8,00,00 |
| Indirect expense | 25% of gross profit | 25% of gross profit |
| Cost of revenue from operations | 4,28,000 | 7,28,000 |
| Other incomes | 10,000 | 12,000 |
| Income tax | 30% | 30% |

6. Prepare a Common Size balance sheet from the following balance sheet of Aditya Ltd., and Anjali Ltd.:

| *Particulars* | *Aditya Ltd.* Rs. | *Anjali Ltd.* Rs. |
|---|---|---|
| **I. Equity and Liabilities** | | |
| a) Equity share capital | 6,00,000 | 8,00,000 |
| b) Reserves and surplus | 3,00,000 | 2,50,000 |
| c) Current liabilities | 1,00,000 | 1,50,000 |
| **Total** | **10,00,000** | **12,00,000** |
| **II. Assets** | | |
| a) Fixed assets | 4,00,000 | 7,00,000 |
| b) Current assets | 6,00,000 | 5,00,000 |
| **Total** | **1,00,0000** | **12,00,000** |

## Answers to Test your Understanding

**Test your Understanding – I**

1. Simplifying 2. explaining the impact of 3. horizontal
4. vertical 5. cash flow.

**Test your Understanding – II**

1 (d) 2 (d) 3 (c) 4 (a) 5 (b)

**Test your Understanding – III**

(a) True (b) True (c) True (d) True (e) True (f) False
(g) True (h) True (i) True (j) True

# Accounting Ratios

5

**Learning Objectives**

*After studying this chapter, you will be able to :*

- *explain the meaning, objectives and limitations of accounting ratios;*
- *identify the various types of ratios commonly used ;*
- *calculate various ratios to assess solvency, liquidity, efficiency and profitability of the firm;*
- *interpret the various ratios calculated for intra-firm and inter-firm comparisons.*

Financial statements aim at providing financial information about a business enterprise to meet the information needs of the decision-makers. Financial statements prepared by a business enterprise in the corporate sector are published and are available to the decision-makers. These statements provide financial data which require analysis, comparison and interpretation for taking decision by the external as well as internal users of accounting information. This act is termed as financial statement analysis. It is regarded as an integral and important part of accounting. As indicated in the previous chapter, the most commonly used techniques of financial statements analysis are comparative statements, common size statements, trend analysis, accounting ratios and cash flow analysis. The first three have been discussed in detail in the previous chapter. This chapter covers the technique of accounting ratios for analysing the information contained in financial statements for assessing the solvency, efficiency and profitability of the enterprises.

## 5.1 Meaning of Accounting Ratios

As stated earlier, accounting ratios are an important tool of financial statements analysis. A ratio is a mathematical number calculated as a reference to relationship of two or more numbers and can be expressed as a fraction, proportion, percentage and a number of times. When the number is calculated by referring to two accounting numbers derived from the financial statements, it is termed as accounting ratio. For example, if the gross profit of the business is Rs. 10,000 and the 'Revenue from Operations' are Rs. 1,00,000, it can be said that the gross profit is 10% $\frac{10,000}{1,00,000} \times 100$ of the 'Revenue from Operations' . This ratio is termed as gross profit ratio. Similarly, inventory turnover ratio may be 6 which implies that inventory turns into 'Revenue from Operations' six times in a year.

It needs to be observed that accounting ratios exhibit relationship, if any, between accounting numbers extracted from financial statements. Ratios are essentially derived numbers and their efficacy depends a great deal upon the basic numbers from which they are calculated. Hence, if the financial statements contain some errors, the derived numbers in terms of ratio analysis would also present an erroneous scenario. Further, a ratio must be calculated using numbers which are meaningfully correlated. A ratio calculated by using two unrelated numbers would hardly serve any purpose. For example, the furniture of the business is Rs. 1,00,000 and Purchases are Rs. 3,00,000. The ratio of purchases to furniture is 3 (3,00,000/1,00,000) but it hardly has any relevance. The reason is that there is no relationship between these two aspects.

## 5.2 Objectives of Ratio Analysis

Ratio analysis is indispensable part of interpretation of results revealed by the financial statements. It provides users with crucial financial information and points out the areas which require investigation. Ratio analysis is a technique which involves regrouping of data by application of arithmetical relationships, though its interpretation is a complex matter. It requires a fine understanding of the way and the rules used for preparing financial statements. Once done effectively, it provides a lot of information which helps the analyst:

1. To know the areas of the business which need more attention;
2. To know about the potential areas which can be improved with the effort in the desired direction;
3. To provide a deeper analysis of the profitability, liquidity, solvency and efficiency levels in the business;
4. To provide information for making cross-sectional analysis by comparing the performance with the best industry standards; and
5. To provide information derived from financial statements useful for making projections and estimates for the future.

## 5.3 Advantages of Ratio Analysis

The ratio analysis if properly done improves the user's understanding of the efficiency with which the business is being conducted. The numerical relationships throw light on many latent aspects of the business. If properly analysed, the ratios make us understand various problem areas as well as the bright spots of the business. The knowledge of problem areas help management take care of them in future. The knowledge of areas which are working better helps you improve the situation further. It must be emphasised that ratios are means to an end rather than the end in themselves. Their role is essentially indicative and that of a whistle blower. There are many advantages derived from ratio analysis. These are summarised as follows:

1. *Helps to understand efficacy of decisions:* The ratio analysis helps you to understand whether the business firm has taken the right kind of operating, investing and financing decisions. It indicates how far they have helped in improving the performance.
2. *Simplify complex figures and establish relationships:* Ratios help in simplifying the complex accounting figures and bring out their relationships. They help summarise the financial information effectively and assess the managerial efficiency, firm's credit worthiness, earning capacity, etc.
3. *Helpful in comparative analysis:* The ratios are not be calculated for one year only. When many year figures are kept side by side, they help a great deal in exploring the trends visible in the business. The knowledge of trend helps in making projections about the business which is a very useful feature.
4. *Identification of problem areas:* Ratios help business in identifying the problem areas as well as the bright areas of the business. Problem areas would need more attention and bright areas will need polishing to have still better results.
5. *Enables SWOT analysis:* Ratios help a great deal in explaining the changes occurring in the business. The information of change helps the management a great deal in understanding the current threats and opportunities and allows business to do its own SWOT (Strength-Weakness-Opportunity-Threat) analysis.
6. *Various comparisons:* Ratios help comparisons with certain bench marks to assess as to whether firm's performance is better or otherwise. For this purpose, the profitability, liquidity, solvency, etc., of a business, may be compared: (i) over a number of accounting periods with itself (Intra-firm Comparison/Time Series Analysis), (ii) with other business enterprises (Inter-firm Comparison/Cross-sectional Analysis) and (iii) with standards set for that firm/industry (comparison with standard (or industry expectations).

## 5.4 Limitations of Ratio Analysis

Since the ratios are derived from the financial statements, any weakness in the original financial statements will also creep in the derived analysis in the form of ratio analysis. Thus, the limitations of financial statements also form the limitations of the ratio analysis. Hence, to interpret the ratios, the user should be aware of the rules followed in the preparation of financial statements and also their nature and limitations. The limitations of ratio analysis which arise primarily from the nature of financial statements are as under:

1. *Limitations of Accounting Data:* Accounting data give an unwarranted impression of precision and finality. In fact, accounting data "reflect a combination of recorded facts, accounting conventions and personal judgements which affect them materially. For example, profit of the business is not a precise and final figure. It is merely an opinion of the accountant based on application of accounting policies. The soundness of the judgement necessarily depends on the competence and integrity of those who make them and on their adherence to Generally Accepted Accounting Principles and Conventions". Thus, the financial statements may not reveal the true state of affairs of the enterprises and so the ratios will also not give the true picture.
2. *Ignores Price-level Changes:* The financial accounting is based on stable money measurement principle. It implicitly assumes that price level changes are either non-existent or minimal. But the truth is otherwise. We are normally living in inflationary economies where the power of money declines constantly. A change in the price-level makes analysis of financial statement of different accounting years meaningless because accounting records ignore changes in value of money.
3. *Ignore Qualitative or Non-monetary Aspects:* Accounting provides information about quantitative (or monetary) aspects of business. Hence, the ratios also reflect only the monetary aspects, ignoring completely the non-monetary (qualitative) factors.
4. *Variations in Accounting Practices:* There are differing accounting policies for valuation of inventory, calculation of depreciation, treatment of intangibles Assets definition of certain financial variables etc., available for various aspects of business transactions. These variations leave a big question mark on the cross-sectional analysis. As there are variations in accounting practices followed by different business enterprises, a valid comparison of their financial statements is not possible.
5. *Forecasting:* Forecasting of future trends based only on historical analysis is not feasible. Proper forecasting requires consideration of non-financial factors as well.

Now let us talk about the limitations of the ratios. The various limitations are:

1. *Means and not the End:* Ratios are means to an end rather than the end by itself.

2. *Lack of ability to resolve problems:* Their role is essentially indicative and of whistle blowing and not providing a solution to the problem.
3. *Lack of standardised definitions:* There is a lack of standardised definitions of various concepts used in ratio analysis. For example, there is no standard definition of liquid liabilities. Normally, it includes all current liabilities, but sometimes it refers to current liabilities less bank overdraft.
4. *Lack of universally accepted standard levels:* There is no universal yardstick which specifies the level of ideal ratios. There is no standard list of the levels universally acceptable, and, in India, the industry averages are also not available.
5. *Ratios based on unrelated figures:* A ratio calculated for unrelated figures would essentially be a meaningless exercise. For example, creditors of Rs. 1,00,000 and furniture of Rs. 1,00,000 represent a ratio of 1:1. But it has no relevance to assess efficiency or solvency.

Hence, ratios should be used with due consciousness of their limitations while evaluating the performance of an organisation and planning the future strategies for its improvement.

**Test your Understanding – I**

**1. State which of the following statements are True or False.**

(a) The only purpose of financial reporting is to keep the managers informed about the progress of operations.

(b) Analysis of data provided in the financial statements is termed as financial analysis.

(c) Long-term borrowings are concerned about the ability of a firm to discharge its obligations to pay interest and repay the principal amount.

(d) A ratio is always expressed as a quotient of one number divided by another.

(e) Ratios help in comparisons of a firm's results over a number of accounting periods as well as with other business enterprises.

(f) A ratio reflects quantitative and qualitative aspects of results.

## 5.5 Types of Ratios

There is a two way classification of ratios: (1) traditional classification, and (2) functional classification. The traditional classification has been on the basis of financial statements to which the determinants of ratios belong. On this basis the ratios are classified as follows:

1. *'Statement of Profit and Loss Ratios:* A ratio of two variables from the statement of profit and loss is known as statement of profit and loss ratio. For example, ratio of gross profit to revenue from operations is known as gross profit ratio. It is calculated using both figures from the statement of profit and loss.

2. *Balance Sheet Ratios:* In case both variables are from the balance sheet, it is classified as balance sheet ratios. For example, ratio of current assets to current liabilities known as current ratio. It is calculated using both figures from balance sheet.
3. *Composite Ratios:* If a ratio is computed with one variable from the statement of profit and loss and another variable from the balance sheet, it is called composite ratio. For example, ratio of credit revenue from operations to trade receivables (known as trade receivables turnover ratio) is calculated using one figure from the statement of profit and loss (credit revenue from operations) and another figure (trade receivables) from the balance sheet.

Although accounting ratios are calculated by taking data from financial statements but classification of ratios on the basis of financial statements is rarely used in practice. It must be recalled that basic purpose of accounting is to throw light on the financial performance (profitability) and financial position (its capacity to raise money and invest them wisely) as well as changes occurring in financial position (possible explanation of changes in the activity level). As such, the alternative classification (functional classification) based on the purpose for which a ratio is computed, is the most commonly used classification which is as follows:

1. *Liquidity Ratios:* To meet its commitments, business needs liquid funds. The ability of the business to pay the amount due to stakeholders as and when it is due is known as liquidity, and the ratios calculated to measure it are known as 'Liquidity Ratios'. These are essentially short-term in nature.
2. *Solvency Ratios:* Solvency of business is determined by its ability to meet its contractual obligations towards stakeholders, particularly towards external stakeholders, and the ratios calculated to measure solvency position are known as 'Solvency Ratios'. These are essentially long-term in nature.
3. *Activity (or Turnover) Ratios:* This refers to the ratios that are calculated for measuring the efficiency of operations of business based on effective utilisation of resources. Hence, these are also known as 'Efficiency Ratios'.
4. *Profitability Ratios:* It refers to the analysis of profits in relation to revenue from operations or funds (or assets) employed in the business and the ratios calculated to meet this objective are known as 'Profitability Ratios'.

## 5.6 Liquidity Ratios

Liquidity ratios are calculated to measure the short-term solvency of the business, i.e. the firm's ability to meet its current obligations. These are analysed by looking at the amounts of current assets and current liabilities in the balance sheet. The two ratios included in this category are current ratio and liquidity ratio.

### 5.6.1 Current Ratio

*Current ratio is the proportion of current assets to current liabilities. It is expressed as follows:*

$$\text{Current Ratio} = \text{Current Assets : Current Liabilities or } \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

Current assets include current investments, inventories, trade receivables (debtors and bills receivables), cash and cash equivalents, short-term loans and advances and other current assets such as prepaid expenses, advance tax and accrued income, etc.

Current liabilities include short-term borrowings, trade payables (creditors and bills payables), other current liabilities and short-term provisions.

***Illustration 1***

Calulate Current Ratio from the following information:

| Particulars | Rs. |
|---|---|
| Inventories | 50,000 |
| Trade receivables | 50,000 |
| Advance tax | 4,000 |
| Cash and cash equivalents | 30,000 |
| Trade payables | 1,00,000 |
| Short-term borrowings (bank overdraft) | 4,000 |

***Solution:***

Current Ratio = $\frac{\text{Current Assets}}{\text{Current Liabilities}}$

Current Assets = Inventories + Trade receivables + Advance tax + Cash and cash equivalents
= Rs. 50,000 + Rs. 50,000 + Rs. 4,000 + Rs. 30,000
= Rs. 1,34,000

Current Liabilities = Trade payables + Short-term borrowings
= Rs. 1,00,000 + Rs. 4,000
= Rs. 1,04,000

Current Ratio = $\frac{\text{Rs.}1,34,000}{\text{Rs.}1,04,000} = 1.29:1$

*Significance:* It provides a measure of degree to which current assets cover current liabilities. The excess of current assets over current liabilities provides a measure of safety margin available against uncertainty in realisation of current assets and flow of funds. The ratio should be reasonable. It should neither be very high or very low. Both the situations have their inherent disadvantages. A very high current ratio implies heavy investment in current assets which is not a good sign as it reflects under utilisation or improper utilisation of resources. A low ratio endangers the business and puts it at risk of facing a situation where it will not be able to pay its short-term debt on time. If this problem persists, it may affect firm's credit worthiness adversely. Normally, it is safe to have this ratio within the range of 2:1.

### 5.6.2 Quick Ratio

It is the ratio of quick (or liquid) asset to current liabilities. It is expressed as

$$\text{Quick ratio} = \text{Quick Assets : Current Liabilities} \quad \text{or} \quad \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

The quick assets are defined as those assets which are quickly convertible into cash. While calculating quick assets we exclude the inventories at the end and other current assets such as prepaid expenses, advance tax, etc., from the current assets. Because of exclusion of non-liquid current assets it is considered better than current ratio as a measure of liquidity position of the business. It is calculated to serve as a supplementary check on liquidity position of the business and is therefore, also known as 'Acid-Test Ratio'.

***Illustration 2***

Calculate quick ratio from the information given in illustration 1.

***Solution:***

$$\text{Quick Ratio} = \frac{\text{Quick Assets}}{\text{Current Liabilities}}$$

$$\begin{aligned}\text{Quick Assets} &= \text{Current assets} - (\text{Inventories} + \text{Advance tax}) \\ &= \text{Rs. } 1{,}34{,}000 - (\text{Rs. } 50{,}000 + \text{Rs. } 4{,}000) \\ &= \text{Rs. } 80{,}000 \\ \text{Current Liabilities} &= \text{Rs. } 1{,}04{,}000\end{aligned}$$

$$\text{Quick Ratio} = \frac{\text{Rs. } 80{,}000}{\text{Rs. } 1{,}04{,}000} = 0.77 : 1$$

*Significance:* The ratio provides a measure of the capacity of the business to meet its short-term obligations without any flaw. Normally, it is advocated to be safe to have a ratio of 1:1 as unnecessarily low ratio will be very risky and a high ratio suggests unnecessarily deployment of resources in otherwise less profitable short-term investments.

### *Illustration 3*

Calculate 'Liquidity Ratio' from the following information:

| | | |
|---|---|---|
| Current liabilities | = | Rs. 50,000 |
| Current assets | = | Rs. 80,000 |
| Inventories | = | Rs. 20,000 |
| Advance tax | = | Rs. 5,000 |
| Prepaid expenses | = | Rs. 5,000 |

### *Solution*

$$\text{Liquidity Ratio} = \frac{\text{Liquid Assets}}{\text{Current Liabilities}}$$

Liquidity Assets = Current assets – (Inventories + Prepaid expenses + Advance tax)

= Rs. 80,000 – (Rs. 20,000 + Rs. 5,000 + Rs. 5,000)

= Rs. 50,000

$$\text{Liquidity Ratio} = \frac{\text{Rs. } 50,000}{\text{Rs. } 50,000} = 1:1$$

### *Illustration 4*

X Ltd., has a current ratio of 3.5:1 and quick ratio of 2:1. If excess of current assets over quick assets represented by inventories is Rs. 24,000, calculate current assets and current liabilities.

### *Solution:*

| | | |
|---|---|---|
| Current Ratio | = | 3.5:1 |
| Quick Ratio | = | 2:1 |
| Let Current liabilities | = | x |
| Current assets | = | 3.5x |
| and Quick assets | = | 2x |
| Inventories | = | Current assets – Quick assets |
| 24,000 | = | 3.5x – 2x |
| 24,000 | = | 1.5x |
| x | = | Rs.16,000 |
| Current Liabilities | = | Rs.16,000 |
| Current Assets | = | 3.5x = 3.5 × Rs. 16,000 = Rs. 56,000. |

*Verification :*

| | | |
|---|---|---|
| Current Ratio | = | Current assets : Current liabilities |
| | = | Rs. 56,000 : Rs. 16,000 |
| | = | 3.5 : 1 |
| Quick Ratio | = | Quick assets : Current liabilities |
| | = | Rs. 32,000 : Rs. 16,000 |
| | = | 2 : 1 |

### Illustration 5

Calculate the current ratio from the following information:

| | | |
|---|---|---|
| Total assets | = | Rs. 3,00,000 |
| Non-current liabilities | = | Rs. 80,000 |
| Shareholders' Funds | = | Rs. 2,00,000 |
| *Non-Current Assets:* | | |
| Fixed assets | = | Rs. 1,60,000 |
| Non-current Investments | = | Rs. 1,00,000 |

### Solution:

| | | |
|---|---|---|
| Total assets | = | Non-current assets + Current assets |
| Rs. 3,00,000 | = | Rs. 2,60,000 + Current assets |
| Current assets | = | Rs. 3,00,000 – Rs. 2,60,000 = Rs. 40,000 |
| Total assets | = | Equity and Liabilities |
| | = | Shareholders' Funds + Non-current liabilities + Current liabilities |
| Rs. 3,00,000 | = | Rs. 2,00,000 + Rs. 80,000 + Current Liabilities |
| Current liabilities | = | Rs. 3,00,000 – Rs. 2,80,000 |
| | = | Rs. 20,000 |

$$\text{Current Ratio} = \frac{\text{Current Assets}}{\text{Current Liabilities}}$$

$$= \frac{\text{Rs. } 40,000}{\text{Rs. } 20,000} = 2:1$$

**Do it Yourself**

1. Current liabilities of a company are Rs. 5,60,000, current ratio is 2.5:1 and quick ratio is 2:1. Find the value of the Inventories.
2. Current ratio = 4.5:1, quick ratio = 3:1.Inventory is Rs. 36,000. Calculate the current assets and current liabilities.
3. Current assets of a company are Rs. 5,00,000. Current ratio is 2.5:1 and Liquid ratio is 1:1. Calculate the value of current liabilities, liquid assets and inventories.

***Illustration 6***

The current ratio is 2 : 1. State giving reasons which of the following transactions would improve, reduce and not change the current ratio:

(a) Payment of current liability;
(b) Purchased goods on credit;
(c) Sale of a Computer (Book value: Rs. 4,000) for Rs. 3,000 only;
(d) Sale of merchandise (goods) costing Rs. 10,000 for Rs. 11,000;
(e) Payment of dividend.

***Solution:***

The given current ratio is 2 : 1. Let us assume that current assets are Rs. 50,000 and current liabilities are Rs. 25,000; Thus, the current ratio is 2 : 1. Now we will analyse the effect of given transactions on current ratio.

(a) Assume that Rs. 10,000 of creditors is paid by cheque. This will reduce the current assets to Rs. 40,000 and current liabilities to Rs. 15,000. The new ratio will be 2.67 : 1 (Rs. 40,000/Rs.15,000). Hence, it has *improved*.
(b) Assume that goods of Rs. 10,000 are purchased on credit. This will increase the current assets to Rs. 60,000 and current liabilities to Rs. 35,000. The new ratio will be 1.7:1 (Rs. 60,000/Rs. 35,000). Hence, it has *reduced*.
(c) Due to sale of a computer (a fixed asset) the current assets will increase to Rs. 53,000 without any change in the current liabilities. The new ratio will be 2.12 : 1 (Rs. 53,000/Rs. 25,000). Hence, it has *improved*.
(d) This transaction will decrease the inventories by Rs. 10,000 and increase the cash by Rs. 11,000 thereby increasing the current assets by Rs. 1,000 without any change in the current liabilities. The new ratio will be 2.04 : 1 (Rs. 51,000/Rs. 25,000). Hence, it has *improved*.
(e) Assume that ₹5,000 is given by way of dividend. It will reduce the current assets to ₹45,000 and short-term provisions (current liabilities) by ₹5,000. The new ratio will be 2:25:1 (₹45,000/₹20,000). Hence, it has improved.

## 5.7 Solvency Ratios

The persons who have advanced money to the business on long-term basis are interested in safety of their periodic payment of interest as well as the repayment of principal amount at the end of the loan period. Solvency ratios are calculated to determine the ability of the business to service its debt in the long run. The following ratios are normally computed for evaluating solvency of the business.

1. Debt-Equity Ratio;
2. Debt to Capital Employed Ratio;
3. Proprietary Ratio;
4. Total Assets to Debt Ratio;
5. Interest Coverage Ratio.

### *5.7.1 Debt-Equity Ratio*

Debt-Equity Ratio measures the relationship between long-term debt and equity. If debt component of the total long-term funds employed is small, outsiders feel more secure. From security point of view, capital structure with less debt and more equity is considered favourable as it reduces the chances of bankruptcy. Normally, it is considered to be safe if debt equity ratio is 2 : 1. However, it may vary from industry to industry. It is computed as follows:

$$\text{Debt-Equity Ratio} = \frac{\text{Long – term Debts}}{\text{Shareholders' Funds}}$$

where:

| | | |
|---|---|---|
| Shareholders' Funds (Equity) | = | Share capital + Reserves and Surplus + Money received against share warrants |
| Share Capital | = | Equity share capital + Preference share capital |
| | | or |
| Shareholders' Funds (Equity) | = | Non-current sssets + Working capital – Non-current liabilities |
| Working Capital | = | Current Assets – Current Liabilities |

*Significance:* This ratio measures the degree of indebtedness of an enterprise and gives an idea to the long-term lender regarding extent of security of the debt. As indicated earlier, a low debt equity ratio reflects more security. A high ratio, on the other hand, is considered risky as it may put the firm into difficulty in meeting its obligations to outsiders. However, from the perspective of the owners, greater use of debt (trading on equity) may help in ensuring higher returns for them if the rate of earnings on capital employed is higher than the rate of interest payable.

### *Illustration 7*

From the following balance sheet of ABC Co. Ltd. as on March 31, 2015. Calculate debt equity ratio:

**ABC Co. Ltd.**
**Balance Sheet as at 31 March, 2017**

| Particulars | Note No. | Amount (Rs.) |
|---|---|---|
| **I. Equity and Liabilities** | | |
| **1. Shareholders' funds** | | |
| a) Share capital | | 12,00,000 |
| b) Reserves and surplus | | 2,00,000 |
| c) Money received against share warrants | | 1,00,000 |
| **2. Non-current Liabilities** | | |
| a) Long-term borrowings | | 4,00,000 |
| b) Other long-term liabilities | | 40,000 |
| c) Long-term provisions | | 60,000 |
| **3. Current Liabilities** | | |
| a) Short-term borrowings | | 2,00,000 |
| b) Trade payables | | 1,00,000 |
| c) Other current liabilities | | 50,000 |
| d) Short-term provisions | | 1,50,000 |
| | | **25,00,000** |
| **II. Assets** | | |
| **1. Non-Current Assets** | | |
| a) Fixed assets | | 15,00,000 |
| b) Non-current investments | | 2,00,000 |
| c) Long-term loans and advances | | 1,00,000 |
| **2. Current Assets** | | |
| a) Current investments | | 1,50,000 |
| b) Inventories | | 1,50,000 |
| c) Trade receivables | | 1,00,000 |
| d) Cash and cash equivalents | | 2,50,000 |
| e) Short-term loans and advances | | 50,000 |
| | | **25,00,000** |

### *Solution:*

Debt-Equity Ratio $= \dfrac{\text{Debts}}{\text{Equity}}$

Debt = Long-term borrowings + Other long-term liabilities + Long-term provisions

= Rs. 4,00,000 + Rs. 40,000 + Rs. 60,000

= Rs. 5,00,000

Equity = Share capital + Reserves and surplus + Money received against share warrants

= Rs. 12,00,000 + Rs. 2,00,000 + Rs. 1,00,000
= Rs. 15,00,000

Alternatively,
Equity = Non-current assets + Working capital – Non-current liabilities
= Rs. 18,00,000 + Rs. 2,00,000 – Rs. 5,00,000
= Rs. 15,00,000

Working Capital = Current assets – Current liabilities
= Rs. 7,00,000 –Rs. 5,00,000
= Rs. 2,00,000

Debt Equity Ratio $= \frac{50,0000}{1,50,0000} = 0.33:1$

### *Illustration 8*

From the following balance sheet of a company, calculate Debt-Equity Ratio:

**Balance Sheet**

| Particulars | Note No. | Rs. |
|---|---|---|
| **I. Equity and Liabilities** | | |
| **1. Shareholders' funds** | | |
| a) Share capital | | 10,00,000 |
| b) Reserves and surplus | 1 | 1,00,000 |
| **2. Non-Current Liabilities** | | |
| Long-term borrowings | | 1,50,000 |
| **3. Current Liabilities** | | 1,50,000 |
| | | **14,00,000** |
| **II. Assets** | | |
| **1. Non-Current Assets** | | |
| a) Fixed assets | | |
| - Tangible assets | 2 | 11,00,000 |
| **2. Current Assets** | | |
| a) Inventories | | 1,00,000 |
| b) Trade receivables | | 90,000 |
| c) Cash and cash equivalents | | 1,10,000 |
| | | **14,00,000** |

Notes to Accounts

| | Rs. |
|---|---|
| **1. Share Capital** | |
| Equity Share Capital | 8,00,000 |
| Preference Share Capital | 2,00,000 |
| | **10,00,000** |

Fixed Assets

| | Rs. |
|---|---|
| **2. Tangible Assets:** | |
| Plant and Machinery | 5,00,000 |
| Land and Building | 4,00,000 |
| Motor Car | 1,50,000 |
| Furniture | 50,000 |
| | **11,00,000** |

***Solution:***

Debt-Equity Ratio = $\frac{\text{Long - term Debts}}{\text{Equity (Shareholders' Funds)}}$

Long-term Debts = Long-term Borrowings
= Rs. 1,50,000

Equity = Share capital + Reserves and surplus
= Rs. 10,00,000 + Rs. 1,00,000 = Rs. 11,00,000

Debt Equity Ratio = $\frac{1,50,000}{11,00,000}$ = 0.136 : 1

### *5.7.2 Debt to Capital Employed Ratio*

The Debt to capital employed ratio refers to the ratio of long-term debt to the total of external and internal funds (capital employed or net assets). It is computed as follows:

Debt to Capital Employed Ratio = Long-term Debt/Capital Employed (or Net Assets)

Capital employed is equal to the long-term debt + shareholders' funds. Alternatively, it may be taken as net assets which are equal to the total assets – current liabilities taking the data of Illustration 7, capital employed shall work out to Rs. 5,00,000 + Rs. 15,00,000 = Rs. 20,00,000. Similarly, Net Assets as Rs. 25,00,000 – Rs. 5,00,000 = Rs. 20,00,000 and the Debt to capital employed ratio as Rs. 5,00,000/Rs. 20,00,000 = 0.25:1.

*Significance:* Like debt-equity ratio, it shows proportion of long-term debts in capital employed. Low ratio provides security to lenders and high ratio helps management in trading on equity. In the above case, the debt to Capital Employed ratio is less than half which indicates reasonable funding by debt and adequate security of debt.

It may be noted that Debt to Capital Employed Ratio can also be computed in relation to total assets. In that case, it usually refers to the ratio of total debts (long-term debts + current liabilities) to total assets, i.e., total of non-current and current assets (or shareholders', funds + long-term debts + current liabilities), and is expressed as

$$\text{Debt to Capital Employed Ratio} = \frac{\text{Total Debts}}{\text{Total Assets}}$$

### 5.7.3 *Proprietary Ratio*

Proprietary ratio expresses relationship of proprietor's (shareholders) funds to net assets and is calculated as follows :

Proprietary Ratio = Shareholders', Funds/Capital employed (or net assets)

Based on data of Illustration 7, it shall be worked out as follows:

Rs. 15,00,000/Rs. 20,00,000 = 0.75 : 1

*Significance:* Higher proportion of shareholders funds in financing the assets is a positive feature as it provides security to creditors. This ratio can also be computed in relation to total assets instead of net assets (capital employed). It may be noted that the total of debt to capital employed ratio and proprietory ratio is equal to 1. Take these ratios worked out on the basis of data of Illustration 7, the debt to Capital Employed ratio is 0.25 : 1 and the Proprietory Ratio 0.75 : 1 the total is 0.25 + 0.75 = 1. In terms of percentage it can be stated that the 25% of the capital employed is funded by debts and 75% by owners' funds.

### 5.7.4 *Total Assets to Debt Ratio*

This ratio measures the extent of the coverage of long-term debts by assets. It is calculated as

Total assets to Debt Ratio = Total assets/Long-term debts

Taking the data of Illustration 8, this ratio will be worked out as follows:

Rs. 14,00,000/Rs. 1,50,000 = 9.33 : 1

The higher ratio indicates that assets have been mainly financed by owners funds and the long-term loans is adequately covered by assets.

It is better to take the net assets (capital employed) instead of total assets for computing this ratio also. It is observed that in that case, the ratio is the reciprocal of the debt to capital employed ratio.

*Significance:* This ratio primarily indicates the rate of external funds in financing the assets and the extent of coverage of their debts are covered by assets.

### Illustration 9

From the following information, calculate Debt Equity Ratio, Total Assets to Debt Ratio, Proprietory Ratio, and Debt to Capital Employed Ratio:

**Balance Sheet as at March 31, 2017**

| Particulars | Note No. | Rs. |
|---|---|---|
| **I. Equity and Liabilities:** | | |
| **1. Shareholders' funds** | | |
| a) Share capital | | 4,00,000 |
| b) Reserves and surplus | | 1,00,000 |
| **2. Non-current Liabilities** | | |
| Long-term borrowings | | 1,50,000 |
| **3. Current Liabilities** | | 50,000 |
| | | **7,00,000** |
| **II. Assets** | | |
| **1. Non-current Assets** | | |
| a) Fixed assets | | 4,00,000 |
| b) Non-current investments | | 1,00,000 |
| **2. Current Assets** | | 2,00,000 |
| | | **7,00,000** |

***Solution:***

i) Debt-Equity Ratio $= \dfrac{\text{Debts}}{\text{Equity}}$

Debt = Long-term borrowings = Rs. 1,50,000

Equity = Share capital + Reserves and surplus

= Rs. 4,00,000 + Rs. 1,00,000 = Rs. 5,00,000

Debt-Equity Ratio $= \dfrac{\text{Rs. }1,50,000}{\text{Rs. }5,00,000} = 0.3 : 1$

ii) Total Assets to Debt Ratio $= \dfrac{\text{Total assets}}{\text{Long-term debts}}$

Total Assets = Fixed assets + Non-current investments + Current assets

= Rs. 4,00,000 + Rs. 1,00,000 + Rs. 2,00,000 = Rs. 7,00,000

Long-term Debt = Rs. 1,50,000

Total Asset to Debt Ratio $= \dfrac{\text{Rs. }7,00,000}{\text{Rs. }1,50,000} = 4.67 : 1$

iii) Proprietary Ratio = or $\dfrac{\text{Shareholders' Funds}}{\text{Total Assets}}$

$$= \frac{\text{Rs. } 5,00,000}{\text{Rs. } 7,00,000} = 0.71 : 1$$

iv) Debt to Capital Employed Ratio = $\dfrac{\text{Long-term debts}}{\text{Capital Employed}}$

Capital Employed = Shareholders' Funds + Long-term borrowings
= Rs. 5,00,000 + Rs. 1,50,000
= Rs. 6,50,000

Debt to Capital Employed Ratio= $\dfrac{\text{Long-term debts}}{\text{Capital Employed}}$

$$= \frac{\text{Rs. } 1,50,000}{\text{Rs. } 6,50,000} = 0.23 : 1$$

***Illustration 10***

The debt equity ratio of X Ltd. is 0.5 : 1. Which of the following would increase/ decrease or not change the debt equity ratio?

(i) Further issue of equity shares
(ii) Cash received from debtors
(iii) Sale of goods on cash basis
(iv) Redemption of debentures
(v) Purchase of goods on credit.

***Solution:***

The change in the ratio depends upon the original ratio. Let us assume that external funds are Rs. 5,00,000 and internal funds are Rs. 10,00,000.
Now we will analyse the effect of given transactions on debt equity ratio.

(i) Assume that Rs. 1,00,000 worth of equity shares are issued. This will increase the internal funds to Rs. 11,00,000. The new ratio will be 0.45 : 1 (5,00,000/11,00,000). Thus, it is clear that further issue of equity shares decreases the debt-equity ratio.

(ii) Cash received from debtors will leave the internal and external funds unchanged as this will only affect the composition of current assets. Hence, the debt-equity ratio will remain unchanged.

(iii) This will also leave the ratio *unchanged* as sale of goods on cash basis neither affect Debt nor equity.

(iv) Assume that Rs. 1,00,000 debentures are redeemed. This will decrease the long-term debt to Rs. 4,00,000. The new ratio will be 0.4 : 1 (4,00,000/10,00,000). Redemption of debentures will decrease the debit-equity ratio.

(v) This will also leave the ratio *unchanged* as purchase of goods on credit neither affect Debt nor equity.

### 5.7.5 Interest Coverage Ratio

It is a ratio which deals with the servicing of interest on loan. It is a measure of security of interest payable on long-term debts. It expresses the relationship between profits available for payment of interest and the amount of interest payable. It is calculated as follows:

$$\text{Interest Coverage Ratio} = \frac{\text{Net Profit before Interest and Tax}}{\text{Interest on long-term debts}}$$

*Significance:* It reveals the number of times interest on long-term debts is covered by the profits available for interest. A higher ratio ensures safety of interest on debts.

### Illustration 11

From the following details, calculate interest coverage ratio:

Net Profit after tax Rs. 60,000; 15% Long-term debt 10,00,000; and Tax rate 40%.

**Solution:**

| | | |
|---|---|---|
| Net Profit after Tax | = | Rs. 60,000 |
| Tax Rate | = | 40% |
| Net Profit before tax | = | Net profit after tax × 100/(100 – Tax rate) |
| | = | Rs. 60,000 × 100/(100 – 40) |
| | = | Rs. 1,00,000 |
| Interest on Long-term Debt | = | 15% of Rs. 10,00,000 = Rs. 1,50,000 |
| Net profit before interest and tax | = | Net profit before tax + Interest |
| | = | Rs. 1,00,000 + Rs. 1,50,000 = Rs. 2,50,000 |
| Interest Coverage Ratio | = | Net Profit before Interest and Tax/Interest on long-term debt |
| | = | Rs. 2,50,000/Rs. 1,50,000 |
| | = | 1.67 times. |

## 5.8 Activity (or Turnover) Ratio

These ratios indicate the speed at which, activities of the business are being performed. The activity ratios express the number of times assets employed, or, for that matter, any constituent of assets, is turned into sales during an accounting period. Higher turnover ratio means better utilisation of assets and signifies improved efficiency and profitability, and as such are known as efficiency ratios. The important activity ratios calculated under this category are

1. Inventory Turnover;
2. Trade receivable Turnover;
3. Trade payable Turnover;
4. Investment (Net assets) Turnover
5. Fixed assets Turnover; and
6. Working capital Turnover.

### *5.8.1 Inventory Turnover Ratio*

It determines the number of times inventory is converted into revenue from operations during the accounting period under consideration. It expresses the relationship between the cost of revenue from operations and average inventory. The formula for its calculation is as follows:

Inventory Turnover Ratio = Cost of Revenue from Operations / Average Inventory

Where average inventory refers to arithmetic average of opening and closing inventory, and the cost of revenue from operations means revenue from operations less gross profit.

*Significance :* It studies the frequency of conversion of inventory of finished goods into revenue from operations. It is also a measure of liquidity. It determines how many times inventory is purchased or replaced during a year. Low turnover of inventory may be due to bad buying, obsolete inventory, etc., and is a danger signal. High turnover is good but it must be carefully interpreted as it may be due to buying in small lots or selling quickly at low margin to realise cash. Thus, it throws light on utilisation of inventory of goods.

**Test your Understanding – II**

(i) The following groups of ratios are primarily measure risk:
  A. liquidity, activity, and profitability
  B. liquidity, activity, and inventory
  C. liquidity, activity, and debt
  D. liquidity, debt and profitability

(ii) The _________ ratios are primarily measures of return:
  A. liquidity
  B. activity
  C. debt
  D. profitability

(iii) The _________ of business firm is measured by its ability to satisfy its short-term obligations as they become due:
  A. activity
  B. liquidity
  C. debt
  D. profitability

(iv) _________ ratios are a measure of the speed with which various accounts are converted into revenue from operations or cash:
  A. activity
  B. liquidity
  C. debt
  D. profitability

(v) The two basic measures of liquidity are:
  A. inventory turnover and current ratio
  B. current ratio and liquid ratio
  C. gross profit margin and operating ratio
  D. current ratio and average collection period

(vi) The _________ is a measure of liquidity which excludes _______, generally the least liquid asset:
  A. current ratio, trade receivable
  B. liquid ratio, trade receivable
  C. current ratio, inventory
  D. liquid ratio, inventory

***Illustration 12***

From the following information, calculate inventory turnover ratio :

| | | Rs. |
|---|---|---|
| Inventory in the beginning | = | 18,000 |
| Inventory at the end | = | 22,000 |
| Net purchases | = | 46,000 |
| Wages | = | 14,000 |
| Revenue from operations | = | 80,000 |
| Carriage inwards | = | 4,000 |

**Solution:**

Inventory Turnover Ratio $= \dfrac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$

Cost of Revenue from Operations = Inventory in the beginning + Net Purchases + Wages + Carriage inwards – Inventory at the end

= Rs. 18,000 + Rs. 46,000 + Rs. 14,000 + Rs. 4,000 – Rs. 22,000

= Rs. 60,000

Average Inventory $= \dfrac{\text{Inventory in the beginning + Inventory at the end}}{2}$

$= \dfrac{\text{Rs. }18,000 + \text{Rs. }22,000}{2}$ = Rs. 20,000

$\therefore$ Inventory Turnover Ratio $= \dfrac{\text{Rs. }60,000}{\text{Rs. }20,000}$ = 3 Times

**Illustration 13**

From the following information, calculate inventory turnover ratio:

| | | Rs. |
|---|---|---|
| Revenue from operations | = | 4,00,000 |
| Average Inventory | = | 55,000 |
| Gross Profit Ratio | = | 10% |

**Solution:**

Revenue from operations = Rs. 4,00,000

Gross Profit = 10% of Rs. 4,00,000 = Rs. 40,000

Cost of Revenue from operations = Revenue from operations – Gross Profit

= Rs. 4,00,000 – Rs. 40,000 = Rs. 3,60,000

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$$

$$= \frac{\text{Rs. } 3,60,000}{\text{Rs. } 55,000} = 6.55 \text{ times}$$

### *Illustration 14*

A trader carries an average inventory of Rs. 40,000. His inventory turnover ratio is 8 times. If he sells goods at a profit of 20% on Revenue from operations, find out the gross profit.

### *Solution:*

$$\text{Inventory Turnover Ratio} = \frac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$$

$$8 = \frac{\text{Cost of Revenue from Operations}}{\text{Rs. } 40,000}$$

$\therefore$ Cost of Revenue from operations = $8 \times$ Rs. 40,000
= Rs. 3,20,000

$$\text{Revenue from operations} = \text{Cost of Revenue from operations} \times \frac{100}{80}$$

$$= \text{Rs. } 3,20,000 \times \frac{100}{80} = \text{Rs. } 4,00,000$$

Gross Profit = Revenue from operations – Cost of Revenue from operations
= Rs. 4,00,000 – Rs. 3,20,000 = Rs. 80,000

**Do it Yourself**

1. Calculate the amount of gross profit:

| | | |
|---|---|---|
| Average inventory | = | Rs. 80,000 |
| Inventory turnover ratio | = | 6 times |
| Selling price | = | 25% above cost |

2. Calculate Inventory Turnover Ratio:

| | | |
|---|---|---|
| Annual Revenue from operations | = | Rs. 2,00,000 |
| Gross Profit | = | 20% on cost of Revenue from operations |
| Inventory in the beginning | = | Rs. 38,500 |
| Inventory at the end | = | Rs. 41,500 |

### *5.8.2 Trade Receivables Turnover Ratio*

It expresses the relationship between credit revenue from operations and trade receivable. It is calculated as follows :

| | |
|---|---|
| Trade Receivable Turnover ratio | = Net Credit Revenue from Operations/Average Trade Receivable |
| Where Average Trade Receivable | = (Opening Debtors and Bills Receivable + Closing Debtors and Bills Receivable)/2 |

It needs to be noted that debtors should be taken before making any provision for doubtful debts.

*Significance:* The liquidity position of the firm depends upon the speed with which trade receivables are realised. This ratio indicates the number of times the receivables are turned over and converted into cash in an accounting period. Higher turnover means speedy collection from trade receivable. This ratio also helps in working out the average collection period. The ratio is calculated by dividing the days or months in a year by trade receivables turnover ratio.

$$\text{i.e., } \frac{\text{Number of days or Months}}{\text{Trade receivables turnover ratio}}$$

### *Illustration 15*

Calculate the Trade receivables turnover ratio from the following information:

| | Rs. |
|---|---|
| Total Revenue from operations | 4,00,000 |
| Cash Revenue from operations | 20% of Total Revenue from operations |
| Trade receivables as at 1.4.2016 | 40,000 |
| Trade receivables as at 31.3.2017 | 1,20,000 |

### *Solution:*

$$\text{Trade Receivables Turnover Ratio} = \frac{\text{Net Credit Revenue from Operations}}{\text{Average Trade Receivables}}$$

Credit Revenue from operations = Total revenue from operations – Cash revenue from operations

Cash Revenue from operations = 20% of Rs. 4,00,000

$$= \text{Rs. } 4{,}00{,}000 \times \frac{20}{100} = \text{Rs. } 80{,}000$$

Credit Revenue from operations = Rs. 4,00,000 – Rs. 80,000 = Rs. 3,20,000

$$\text{Average Trade Receivables} = \frac{\text{Opening Trade Receivables + Closing Trade Receivables}}{2}$$

$$= \frac{\text{Rs. }40,000 + \text{Rs. }1,20,000}{2} = \text{Rs. }80,000$$

$$\text{Trade Receivables Turnover Rations} = \frac{\text{Net Credit Revenue Form Operations}}{\text{Average Inventoary}}$$

$$\text{Trade Receivables Turnover Ratio} = \frac{\text{Rs. }3,20,000}{\text{Rs. }80,000} = 4 \text{ times.}$$

### 5.8.3 Trade Payable Turnover Ratio

Trade payables turnover ratio indicates the pattern of payment of trade payable. As trade payable arise on account of credit purchases, it expresses relationship between credit purchases and trade payable. It is calculated as follows:

Trade Payables Turnover ratio = Net Credit purchases/ Average trade payable

Where Average Trade Payable = (Opening Creditors and Bills Payable + Closing Creditors and Bills Payable)/2

$$\text{Average Payment Period} = \frac{\text{No. of days/month in a year}}{\text{Trade Payables Turnover Ratio}}$$

*Significance :* It reveals average payment period. Lower ratio means credit allowed by the supplier is for a long period or it may reflect delayed payment to suppliers which is not a very good policy as it may affect the reputation of the business. The average period of payment can be worked out by days/months in a year by the Trade Payable Turnover Ratio.

**Illustration 16**

Calculate the Trade payables turnover ratio from the following figures:

| | | Rs. |
|---|---|---|
| Credit purchases during 2016-17 | = | 12,00,000 |
| Creditors on 1.4.2016 | = | 3,00,000 |
| Bills Payables on 1.4.2016 | = | 1,00,000 |
| Creditors on 31.3.2017 | = | 1,30,000 |
| Bills Payables on 31.3.2017 | = | 70,000 |

**Solution:**

$$\text{Trade Payables Turnover Ratio} = \frac{\text{Net Credit Purchases}}{\text{Average Trade Payables}}$$

$$\text{Average Trade Payables} = \frac{\text{Creditors in the beginning + Bills payables in the beginning + Creditors at the end + Bills payables at the end}}{2}$$

$$= \frac{\text{Rs. }3,00,000 + \text{Rs. }1,00,000 + \text{Rs. }1,30,000 + \text{Rs. }70,000}{2}$$

$= \text{Rs. } 3,00,000$

$$\therefore \text{ Trade Payables Turnover Ratio} = \frac{\text{Rs. }12,00,000}{\text{Rs. }3,00,000} = 4 \text{ times}$$

***Illustration 17***

From the following information, calculate –

(i) Trade receivables turnover ratio
(ii) Average collection period
(iii) Trade rayable turnover ratio
(iv) Average payment period

Given :

| | (Rs.) |
|---|---|
| Revenue from Operations | 8,75,000 |
| Creditors | 90,000 |
| Bills receivable | 48,000 |
| Bills payable | 52,000 |
| Purchases | 4,20,000 |
| Trade debtors | 59,000 |

***Solution:***

$$\text{(i) Trade Receivables Turnover Ratio} = \frac{\text{Net Credit Revenue from operation}}{\text{Average Trade Receivable}}$$

$$= \frac{\text{Rs. }8,75,000}{(\text{Rs. }59,000 + \text{Rs. }48,000)^{*}}$$

$= 8.18 \text{ times}$

* This figure has not been divided by 2, in order to calculate average Trade Receivables as the figures of debtors and bills receivables in the beginning of the year are not available. So when only year-end figures are available use the same as it is.

(ii) Average Collection Period $= \dfrac{365}{\text{Trade Receivables Turnover Ratio}}$

$= \dfrac{365}{8.18}$

$=$ 45 days

(iii) Trade Payable Turnover Ratio $= \dfrac{\text{Purchases *}}{\text{Average Trade Payables}}$

$= \dfrac{\text{Purchases}}{\text{Creditors + Bills payable}}$

$= \dfrac{4,20,000}{90,000 + 52,000}$

$= \dfrac{4,20,000}{1,42,000}$

$=$ 2.96 times

(iv) Average Payment Period $= \dfrac{365}{\text{Trade Payables Turnover Ratio}}$

$= \dfrac{365}{2.96}$

= 123 days

*Since no information regarding credit purchase is given, hence it will be related as net purchases.

### 5.8.4 Net Assets or Capital Employed Turnover Ratio

It reflects relationship between revenue from operations and net assets (capital employed) in the business. Higher turnover means better activity and profitability. It is calculated as follows :

Net Assets or Capital Employed Turnover ratio $= \dfrac{\text{Revenue from Operation}}{\text{Capital Employed}}$

Capital employed turnover ratio which studies turnover of capital employed (or Net Assets) is analysed further by following two turnover ratios :

*(a)* *Fixed Assets Turnover Ratio :* It is computed as follows:

Fixed asset turnover Ratio $= \dfrac{\text{Net Revenue from Operation}}{\text{Net Fixed Assets}}$

(b) *Working Capital Turnover* Ratio : It is calculated as follows :

$$\text{Working Capital Turnover Ratio} = \frac{\text{Net Revenue from Operation}}{\text{Working Capital}}$$

*Significance* : High turnover of capital employed, working capital and fixed assets is a good sign and implies efficient utilisation of resources. Utilisation of capital employed or, for that matter, any of its components is revealed by the turnover ratios. Higher turnover reflects efficient utilisation resulting in higher liquidity and profitability in the business.

### *Illustration 18*

From the following information, calculate (i) Net assets turnover, (ii) Fixed assets turnover, and (iii) Working capital turnover ratios :

| | *Amount (Rs.)* | | *Amount (Rs.)* |
|---|---|---|---|
| Preference shares capital | 4,00,000 | Plant and Machinery | 8,00,000 |
| Equity share capital | 6,00,000 | Land and Building | 5,00,000 |
| General reserve | 1,00,000 | Motor Car | 2,00,000 |
| Balance in Statement of Profit and Loss | 3,00,000 | Furniture | 1,00,000 |
| 15% debentures | 2,00,000 | Inventory | 1,80,000 |
| 14% Loan | 2,00,000 | Debtors | 1,10,000 |
| Creditors | 1,40,000 | Bank | 80,000 |
| Bills payable | 50,000 | Cash | 30,000 |
| Outstanding expenses | 10,000 | | |

Revenue from operations for the year 2016-17 were Rs. 30,00,000

### *Solution:*

Revenue from Operations = Rs. 30,00,000

Capital Employed = Share Capital + Reserves and Surplus + Long-term Debts (or Net Assets)

= (Rs.4,00,000 + Rs.6,00,000) + (Rs.1,00,000 + Rs.3,00,000) + (Rs.2,00,000 + Rs.2,00,000)

= Rs. 18,00,000

Fixed Assets = Rs.8,00,000 + Rs.5,00,000 + Rs.2,00,000 + Rs.1,00,000 = Rs. 16,00,000

Working Capital = Current Assets – Current Liabilities

= Rs.4,00,000 – Rs.2,00,000 = Rs. 2,00,000

| | | | | |
|---|---|---|---|---|
| Net Assets Turnover Ratio | = | Rs.30,00,000/Rs.18,00,000 | = | 1.67 times |
| Fixed Assets Turnover Ratio | = | Rs.30,00,000/Rs.16,00,000 | = | 1.88 times |
| Working Capital Turnover Ratio | = | Rs.30,00,000/Rs.2,00,000 | = | 15 times. |

**Test your Understanding – III**

(i) The ________ is useful in evaluating credit and collection policies.
- A. average payment period
- B. current ratio
- C. average collection period
- D. current asset turnover

(ii) The __________ measures the activity of a firm's inventory.
- A. average collection period
- B. inventory turnover
- C. liquid ratio
- D. current ratio

(iii) The __________ may indicate that the firm is experiencing stockouts and lost sales.
- A. average payment period
- B. inventory turnover ratio
- C. average collection period
- D. quick ratio

(iv) ABC Co. extends credit terms of 45 days to its customers. Its credit collection would be considered poor if its average collection period was.
- A. 30 days
- B. 36 days
- C. 47 days
- D. 37 days

(v) __________ are especially interested in the average payment period, since it provides them with a sense of the bill-paying patterns of the firm.
- A. Customers
- B. Stockholders
- C. Lenders and suppliers
- D. Borrowers and buyers

(vi) The _________ ratios provide the information critical to the long run operation of the firm
- A. liquidity
- B. activity
- C. solvency
- D. profitability

## 5.9 Profitability Ratios

The profitability or financial performance is mainly summarised in the statement of profit and loss. Profitability ratios are calculated to analyse the earning capacity of the business which is the outcome of utilisation of resources employed in the business. There is a close relationship between the profit and the efficiency with which the resources employed in the business are utilised. The various ratios which are commonly used to analyse the profitability of the business are:

1. Gross profit ratio
2. Operating ratio
3. Operating profit ratio
4. Net profit ratio
5. Return on Investment (ROI) or Return on Capital Employed (ROCE)
6. Return on Net Worth (RONW)
7. Earnings per share
8. Book value per share
9. Dividend payout ratio
10. Price earning ratio.

### *5.9.1 Gross Profit Ratio*

Gross profit ratio as a percentage of revenue from operations is computed to have an idea about gross margin. It is computed as follows:

Gross Profit Ratio = Gross Profit/Net Revenue of Operations × 100

*Significance:* It indicates gross margin on products sold. It also indicates the margin available to cover operating expenses, non-operating expenses, etc. Change in gross profit ratio may be due to change in selling price or cost of revenue from operations or a combination of both. A low ratio may indicate unfavourable purchase and sales policy. Higher gross profit ratio is always a good sign.

***Illustration 19***

Following information is available for the year 2016-17, calculate gross profit ratio:

| | Rs. |
|---|---|
| Revenue from Operations: Cash | 25,000 |
| : Credit | 75,000 |
| Purchases : Cash | 15,000 |
| : Credit | 60,000 |
| Carriage Inwards | 2,000 |

| | |
|---|---|
| Salaries | 25,000 |
| Decrease in Inventory | 10,000 |
| Return Outwards | 2,000 |
| Wages | 5,000 |

***Solution:***

| | | |
|---|---|---|
| Revenue from Operations | = | Cash Revenue from Operations + Credit Revenue from Opration |
| | = | Rs.25,000 + Rs.75,000 = Rs. 1,00,000 |
| Net Purchases | = | Cash Purchases + Credit Purchases – Return Outwards |
| | = | Rs.15,000 + Rs.60,000 – Rs.2,000 = Rs. 73,000 |
| Cost of Revenue from operations | = | Purchases + (Opening Inventory – Closing Inventory) + Direct Expenses |
| | = | Purchases + Decrease in inventory + Direct Expenses |
| | = | Rs.73,000 + Rs.10,000 + (Rs.2,000 + Rs.5,000) |
| | = | Rs.90,000 |
| Gross Profit | = | Revenue from Operations – Cost of Revenue from Operation |
| | = | Rs.1,00,000 – Rs.90,000 |
| | = | Rs. 10,000 |
| Gross Profit Ratio | = | Gross Profit/Net Revenue from Operations ×100 |
| | = | Rs.10,000/Rs.1,00,000 × 100 |
| | = | 10%. |

### *5.9.2 Operating Ratio*

It is computed to analyse cost of operation in relation to revenue from operations. It is calculated as follows:

Operating Ratio = (Cost of Revenue from Operations + Operating Expenses)/ Net Revenue from Operations ×100

Operating expenses include office expenses, administrative expenses, selling expenses, distribution expenses, depreciation and employee benefit expenses etc.

Cost of operation is determined by excluding non-operating incomes and expenses such as loss on sale of assets, interest paid, dividend received, loss by fire, speculation gain and so on.

### *5.9.3 Operating Profit Ratio*

It is calculated to reveal operating margin. It may be computed directly or as a residual of operating ratio.

Operating Profit Ratio = 100 – Operating Ratio

Alternatively, it is calculated as under:

Operating Profit Ratio = Operating Profit/ Revenue from Operations × 100

Where Operating Profit = Revenue from Operations – Operating Cost

*Significance:* Operating ratio is computed to express cost of operations excluding financial charges in relation to revenue from operations. A corollary of it is 'Operating Profit Ratio'. It helps to analyse the performance of business and throws light on the operational efficiency of the business. It is very useful for inter-firm as well as intra-firm comparisons. Lower operating ratio is a very healthy sign.

***Illustration 20***

Given the following information:

| | Rs. |
|---|---|
| Revenue from Operations | 3,40,000 |
| Cost of Revenue from Operations | 1,20,000 |
| Selling expenses | 80,000 |
| Administrative Expenses | 40,000 |

Calculate Gross profit ratio and Operating ratio.

***Solution:***

Gross Profit = Revenue from Operations – Cost of Revenue from Operations
= Rs. 3,40,000 – Rs. 1,20,000
= Rs. 2,20,000

$$\text{Gross Profit Ratio} = \frac{\text{Gross Profit}}{\text{Revenue from operation}} \times 100$$

$$= \frac{\text{Rs. } 2{,}20{,}000}{\text{Rs. } 3{,}40{,}000} \times 100$$

= 64.71%

Operating Cost = Cost of Revenue from Operations + Selling Expenses + Administrative Expenses
= Rs. 1,20,000 + 80,000 + 40,000
= Rs. 2,40,000

$$\text{Operating Ratio} = \frac{\text{Operating Cost}}{\text{Net Revenue from Operations}} \times 100$$

$$= \frac{\text{Rs. } 2{,}40{,}000}{\text{Rs. } 3{,}40{,}000} \times 100$$

= 70.59%

### 5.9.4 Net Profit Ratio

Net profit ratio is based on all inclusive concept of profit. It relates revenue from operations to net profit after operational as well as non-operational expenses and incomes. It is calculated as under:

Net Profit Ratio = Net profit/Revenue from Operations × 100

Generally, net profit refers to profit after tax (PAT).

*Significance:* It is a measure of net profit margin in relation to revenue from operations. Besides revealing profitability, it is the main variable in computation of Return on Investment. It reflects the overall efficiency of the business, assumes great significance from the point of view of investors.

### Illustration 21

Gross profit ratio of a company was 25%. Its credit revenue from operations was Rs. 20,00,000 and its cash revenue from operations was 10% of the total revenue from operations. If the indirect expenses of the company were Rs. 50,000, calculate its net profit ratio.

**Solution:**

| | | |
|---|---|---|
| Cash Revenue from Operations | = | Rs.20,00,000 × 10/90 |
| | = | Rs.2,22,222 |
| Hence, total Revenue from Operations are | = | Rs.22,22,222 |
| Gross profit = 0.25 × 22,22,222 | = | Rs. 5,55,555 |
| Net profit | = | Rs.5,55,555 – 50,000 |
| | = | Rs.5,05,555 |
| Net profit ratio | = | Net profit/Revenue from Operations × 100 |
| | = | Rs.5,05,555/Rs.22,22,222 × 100 |
| | = | 22.75%. |

### 5.9.5 Return on Capital Employed or Investment

It explains the overall utilisation of funds by a business enterprise. Capital employed means the long-term funds employed in the business and includes shareholders' funds, debentures and long-term loans. Alternatively, capital employed may be taken as the total of non-current assets and working capital. Profit refers to the Profit Before Interest and Tax (PBIT) for computation of this ratio. Thus, it is computed as follows:

Return on Investment (or Capital Employed) = Profit before Interest and Tax/ Capital Employed × 100

*Significance:* It measures return on capital employed in the business. It reveals the efficiency of the business in utilisation of funds entrusted to it by shareholders, debenture-holders and long-term loans. For inter-firm comparison, return on capital employed funds is considered a good measure of profitability. It also helps in assessing whether the firm is earning a higher return on capital employed as compared to the interest rate paid.

### 5.9.6 Return on Shareholders' Funds

This ratio is very important from shareholders' point of view in assessing whether their investment in the firm generates a reasonable return or not. It should be higher than the return on investment otherwise it would imply that company's funds have not been employed profitably.

A better measure of profitability from shareholders point of view is obtained by determining return on total shareholders' funds, it is also termed as Return on Net Worth (RONW) and is calculated as under :

$$\text{Return on Shareholders' Fund} = \frac{\text{Profit after Tax}}{\text{Shareholders' Funds}} \times 100$$

### 5.9.7 Earnings per Share

The ratio is computed as:

EPS = Profit available for equity shareholders/Number of Equity Shares

In this context, earnings refer to profit available for equity shareholders which is worked out as

Profit after Tax – Dividend on Preference Shares.

This ratio is very important from equity shareholders point of view and also for the share price in the stock market. This also helps comparison with other to ascertain its reasonableness and capacity to pay dividend.

### 5.9.8 Book Value per Share

This ratio is calculated as :

Book Value per share = Equity shareholders' funds/Number of Equity Shares

Equity shareholder fund refers to Shareholders' Funds – Preference Share Capital. This ratio is again very important from equity shareholders point of view as it gives an idea about the value of their holding and affects market price of the shares.

### 5.9.9 Dividend Payout Ratio

This refers to the proportion of earning that are distributed to the shareholders. It is calculated as –

$$\text{Dividend Payout Ratio} = \frac{\text{Dividend per share}}{\text{Earnings per share}}$$

This reflects company's dividend policy and growth in owner's equity.

### 5.9.10 Price / Earning Ratio

The ratio is computed as –

P/E Ratio = Market Price of a share/earnings per share

For example, if the EPS of X Ltd. is Rs. 10 and market price is Rs. 100, the price earning ratio will be 10 (100/10). It reflects investors expectation about the growth in the firm's earnings and reasonableness of the market price of its shares. P/E Ratio vary from industy to industry and company to company in the same industry depending upon investors perception of their future.

**Illustration 22**

From the following details, calculate Return on Investment:

| | | | |
|---|---|---|---|
| Share Capital : Equity (Rs.10) | Rs. 4,00,000 | Current Liabilities | Rs. 1,00,000 |
| 12% Preference | Rs. 1,00,000 | Fixed Assets | Rs. 9,50,000 |
| General Reserve | Rs. 1,84,000 | Current Assets | Rs. 2,34,000 |
| 10% Debentures | Rs. 4,00,000 | | |

Also calculate Return on Shareholders' Funds, EPS, Book value per share and P/E ratio if the market price of the share is Rs. 34 and the net profit after tax was Rs. 1,50,000, and the tax had amounted to Rs. 50,000.

**Solution:**

| | | |
|---|---|---|
| Profit before interest and tax | = | Rs. 1,50,000 + Debenture interest + Tax |
| | = | Rs. 1,50,000 + Rs. 40,000 + Rs. 50,000 |
| | = | Rs.2,40,000 |
| Capital Employed | = | Equity Share Capital + Preference Share Capital + Reserves + Debentures |
| | = | Rs. 4,00,000 + Rs. 1,00,000 + Rs. 1,84,000 + Rs. 4,00,000 = Rs. 10,84,000 |
| Return on Investment | = | Profit before Interest and Tax/ Capital Employed × 100 |
| | = | Rs. 2,40,000/Rs. 10,84,000 × 100 |
| | = | 22.14% |
| Shareholders' Fund | = | Equity Share Capital + Preference Share Capital + General Reserve |
| | = | Rs. 4,00,000 + Rs. 1,00,000 + Rs. 1,84,000 |
| | = | Rs. 6,84,000 |
| Return on Shareholders' Funds | = | Profit after tax/shareholders' Funds × 100 |
| | = | Rs. 1,50,000/Rs. 6,84,000 × 100 |
| | = | 21.93% |
| EPS | = | Profit available for Equity Shareholders/ Number of Equity Shares |
| | = | Rs. 1,38,000/ 40,000 = Rs. 3.45 |
| Preference Share Dividend | = | Rate of Dividend × Prefence Share Capital |
| | = | 12% of Rs. 1,00,000 |
| | = | Rs. 12,000 |
| Profit available to equity Shareholders | = | Profit after Tax – Preference dividend on preference shares |

| | | |
|---|---|---|
| where, Dividend on Prefrence shares | = | Rate of Dividend × Preference Share Capital |
| | = | 12% of Rs. 1,00,000 |
| | = | Rs.12,000 |
| | = | Rs. 1,50,000 – Rs. 12,000 = Rs. 1,38,000 |
| P/E Ratio | = | Market price of a share/ Earnings per share |
| | = | 34/3.45 |
| | = | 9.86 Times |
| Book Value per share | = | Equity Shareholders' fund/No. of equity shares |
| where, Number of Equity Shares | = | $\frac{\text{Equity share capital}}{\text{Face value per share}}$ |
| | = | $\frac{\text{Rs. } 4,00,000}{\text{Rs.}10}$ |
| | = | 40,000 shares |
| Hence, Book value per share | = | Rs. 5,84,000/40,000 shares = Rs. 14.60 |

It may be noted that various ratios are related with each other. Sometimes, the combined information regarding two or more ratios is given and missing figures may need to be calculated. In such a situation, the formula of the ratio will help in working out the missing figures (See Illsuatration 23 and 24).

### *Illustration 23*

Calculate current assets of a company from the following information:

Inventory turnover ratio = 4 times

Inventory at the end is Rs. 20,000 more than the inventory in the beginning.

Revenue from Operations Rs. 3,00,000 and gross profit ratio is 20% of revenue from operations.

Current liabilities = Rs. 40,000

Quick ratio = 0.75 : 1

### *Solution:*

| | | |
|---|---|---|
| Cost of Revenue from Operations | = | Revenue from Operations – Gross Profit |
| | = | Rs. 3,00,000 – (Rs. 3,00,000 × 20%) |
| | = | Rs. 3,00,000 – Rs. 60,000 |
| | = | Rs. 2,40,000 |
| Inventory Turnover Ratio | = | Cost of Revenue from Operations/ Average Inventory |
| Average Inventory | = | Cost of Revenue from Operations/4 |
| | = | Rs. 2,40,000/4 = Rs. 60,000 |
| Average Inventory | = | (Opening inventory + Closing inventory)/2 |
| Rs. 60,000 | = | Opening inventory + (Opening inventory +Rs.20,000)/2 |
| Rs. 60,000 | = | Opening inventory + Rs. 10,000 |
| Opening Inventory | = | Rs. 50,000 |
| Closing Inventory | = | Rs. 70,000 |
| Liquid Ratio | = | Liquid assets/current liabilities |

| | | |
|---|---|---|
| 0.75 | = | Liquid assets/Rs. 40,000 |
| Liquid Assets | = | Rs. 40,000 × 0.75 = Rs. 30,000 |
| Current Assets | = | Liquid assets + Closing inventory |
| | = | Rs. 30,000 + Rs. 70,000 = Rs. 1,00,000 |

### *Illustration 24*

The current ratio is 2.5 : 1. Current assets are Rs. 50,000 and current liabilities are Rs. 20,000. How much must be the decline in the current assets to bring the ratio to 2 : 1

### *Solution:*

| | | |
|---|---|---|
| Current liabilities | = | Rs. 20,000 |
| For a ratio of 2 : 1, the current assets must be 2 × 20,000 | = | Rs. 40,000 |
| Present level of current assets | = | Rs. 50,000 |
| Necessary decline | = | Rs. 50,000 – Rs. 40,000 |
| | = | Rs. 10,000 |

### *Illustration 25*

Following information is given by a company from its books of accounts as on March 31, 2017:

| Particulars | Rs. |
|---|---|
| Inventory | 1,00,000 |
| Total Current Assets | 1,60,000 |
| Shareholders' funds | 4,00,000 |
| 13% Debentures | 3,00,000 |
| Current liabilities | 1,00,000 |
| Net Profit Before Tax | 3,51,000 |
| Cost of revenue from operations | 5,00,000 |

Calculate:

i) Current Ratio
ii) Liquid Ratio
iii) Debt Equity Ratio
iv) Interest Coverage Ratio
v) Inventory Turnover Ratio

### *Solution:*

i) Current Ratio $= \dfrac{\text{Current Assets}}{\text{Current Liabilities}}$

$$= \frac{\text{Rs. } 1,60,000}{\text{Rs. } 1,00,000} = 1.6 : 1$$

ii) Liquid Assets = Current assets – Inventory
= Rs. 1,60,000 – Rs. 1,00,000
= Rs. 60,000

Liquid Ratio $= \dfrac{\text{Liquid Assets}}{\text{Current Liabilities}}$

$= \dfrac{\text{Rs. } 60,000}{\text{Rs. } 1,00,000} = 0.6 : 1$

iii) Debt-Equity Ratio $= \dfrac{\text{Long-term Debts}}{\text{Shareholders' Funds}}$

$= \dfrac{\text{Rs. } 3,00,000}{\text{Rs. } 4,00,000} = 0.75 : 1$

iv) Net Profit before Interest & Tax = Net Profit before Tax + Interest on Long term Debts
= Rs. 3,51,000 + (13% of Rs. 3,00,000)
= Rs. 3,51,000 + Rs. 39,000 = Rs. 3,90,000

Interest Coverage Ratio $= \dfrac{\text{Net Profit before Interest \& Tax}}{\text{Interest on Long Term Debts}}$

$= \dfrac{\text{Rs. } 3,90,000}{\text{Rs. } 39,000} = 10 \text{ times}$

v) Inventory Turnover Ratio $= \dfrac{\text{Cost of Revenue from Operations}}{\text{Average Inventory}}$

$= \dfrac{\text{Rs. } 5,00,000}{\text{Rs. } 1,00,000} = 5 \text{ times}$

Note: In absence of information regarding 'Inventory in the beginning' and 'Inventory at the end', the 'Inventory' is treated as Average Inventory.

### *Illustration 26*

From the following information calculate (i) Earning per share (ii) Book value per share (iii) Dividend payout ratio (iv) Price earning ratio

| Particulars | Rs. |
|---|---|
| 70,000 equity shares of Rs 10 each | 7,00,000 |
| Net Profit after tax but before dividend | 1,75,000 |
| Market price of a share | 13 |
| Dividend declared @ 15% | |

**Solution:**

i) Earning per share = $\frac{\text{Profit available for Equity Shareholders}}{\text{Number of Equity Shares}}$

$= \frac{\text{Rs. } 1,75,000}{\text{Rs. } 70,000} = \text{Rs. } 2.50$

ii) Book value per share = $\frac{\text{Equity Shareholders' Funds}}{\text{Number of Equity Shares}}$

$= \frac{\text{Rs. } 8,75,000}{\text{Rs. } 70,000} = \text{Rs. } 12.50$

iii) Dividend payout ratio = $\frac{\text{Dividend per share}}{\text{Earnings per share}}$

$= \frac{1.50}{2.50} = 0.6$

iv) Price earning ratio = $\frac{\text{Market price of a share}}{\text{Earnings per share}}$

$= \frac{13}{2.50} = 5.20$

### *Terms Introduced in the Chapter*

1. Ratio Analysis
2. Liquidity Ratios
3. Solvency Ratios
4. Activity Ratios
5. Profitability Ratios
6. Return on Investment (ROI)
7. Quick Assets
8. Shareholders' Funds (Equity)
9. Return on Net Worth
10. Average Collection Period
11. Trade Receivables
12. Turnover Ratios
13. Efficiency Ratios
14. Dividend Payout

### *Summary*

*Ratio Analysis:* An important tool of financial statement analysis is ratio analysis. Accounting ratios represent relationship between two accounting numbers.

*Objective of Ratio Analysis:* The objective of ratio analysis is to provide a deeper analysis of the profitability, liquidity, solvency and activity levels in the business. It is also to identify the problem areas as well as the strong areas of the business.

*Advantages of Ratio Analysis:* Ratio analysis offers many advantages including enabling financial statement analysis, helping understand efficacy of decisions, simplifying complex figures and establish relationships, being helpful in comparative analysis, identification of problem areas, enables SWOT analysis, and allows various comparisons.

*Limitations of Ratio Analysis:* There are many limitations of ratio analysis. Few are based because of the basic limitations of the accounting data on which it is based. In the first set are included factors like Historical Analysis, Ignores Price-level Changes, Ignore Qualitative or Non-monetary Aspects, Limitations of Accounting Data, Variations in Accounting Practices, and Forecasting. In the second set are included factor like means and not the end, lack of ability to resolve problems, lack of standardised definitions, lack of universally accepted standard levels, and ratios based on unrelated figures.

*Types of Ratios*: There are many types of ratios, viz., liquidity, solvency, activity and profitability ratios. The liquidity ratios include current ratio and acid test ratio. Solvency ratios are calculated to determine the ability of the business to service its debt in the long run instead of in the short run. They include debt equity ratio, total assets to debt ratio, proprietary ratio and interest coverage ratio. The turnover ratios basically exhibit the activity levels characterised by the capacity of the business to make more sales or turnover and include Inventory Turnover, Trade Receivables Turnover, Trade Payables Turnover, Working Capital Turnover, Fixed Assets Turnover and Current assets Turnover. Profitability ratios are calculated to analyse the earning capacity of the business which is the outcome of utilisation of resources employed in the business. The ratios include Gross Profit ratio, Operating ratio, Net Profit Ratio, Return on investment (Capital employed), Earnings per Share, Book Value per Share, Dividend per Share and Price/Earning ratio.

## *Questions for Practice*

**Short Answer Questions**

1. What do you mean by Ratio Analysis?
2. What are various types of ratios?
3. What relationships will be established to study:
   a. Inventory turnover
   b. Trade receivables turnover
   c. Trade payables turnover
   d. Working capital turnover
4. The liquidity of a business firm is measured by its ability to satisfy its long-term obligations as they become due. What are the ratios used for this purpose?
5. The average age of inventory is viewed as the average length of time inventory is held by the firm for which explain with reasons.

**Long Answer Questions**

1. What are liquidity ratios? Discuss the importance of current and liquid ratio.
2. How would you study the Solvency position of the firm?
3. What are various profitability ratios? How are these worked out?
4. The current ratio provides a better measure of overall liquidity only when a firm's inventory cannot easily be converted into cash. If inventory is liquid, the quick ratio is a preferred measure of overall liquidity. Explain.

**Numerical Questions**

1. Following is the Balance Sheet of Raj Oil Mills Limited as at March 31, 2017. Calculate current ratio.

| Particulars | Rs. |
|---|---|
| **I. Equity and Liabilities:** | |
| 1. Shareholders' funds | |
| a) Share capital | 7,90,000 |
| b) Reserves and surplus | 35,000 |
| 2. Current Liabilities | |
| Trade Payables | 72,000 |
| **Total** | **8,97,000** |
| **II. Assets** | |
| 1. Non-current Assets | |
| Fixed assets | |
| – Tangible assets | 7,53,000 |

| | |
|---|---|
| **2. Current Assets** | |
| a) Inventories | 55,800 |
| b) Trade Receivables | 28,800 |
| c) Cash and cash equivalents | 59,400 |
| **Total** | **8,97,000** |

(**Ans**: Current Ratio 2:1)

2. Following is the Balance Sheet of Title Machine Ltd. as at March 31, 2017.

| Particulars | Amount (Rs.) |
|---|---|
| **I. Equity and Liabilities** | |
| 1. Shareholders' funds | |
| a) Share capital | 24,00,000 |
| b) Reserves and surplus | 6,00,000 |
| 2. Non-current liabilities | |
| Long-term borrowings | 9,00,000 |
| 3. Current liabilities | |
| a) Short-term borrowings | 6,00,000 |
| b) Trade payables | 23,40,000 |
| c) Short-term provisions | 60,000 |
| **Total** | **69,00,000** |
| **II. Assets** | |
| 1. Non-current assets | |
| Fixed assets | |
| - Tangible assets | 45,00,000 |
| 2. Current Assets | |
| a) Inventories | 12,00,000 |
| b) Trade receivables | 9,00,000 |
| c) Cash and cash equivalents | 2,28,000 |
| d) Short-term loans and advances | 72,000 |
| **Total** | **69,00,000** |

Calculate Current Ratio and Liquid Ratio.
(**Ans:** Current Ratio 0.8 : 1, Liquid Ratio 0.4 : 1)

3. Current Ratio is 3.5 : 1. Working Capital is Rs. 90,000. Calculate the amount of Current Assets and Current Liabilities.
(**Ans:** Current Assets Rs. 1,26,000 and Current Liabilities Rs. 36,000)

4. Shine Limited has a current ratio 4.5 : 1 and quick ratio 3 : 1; if the inventory is 36,000, calculate Current Liabilities and Current Assets.
(**Ans:** Current Assets Rs. 1,08,000, Current Liabilities Rs. 24,000)

5. Current Liabilities of a company are Rs. 75,000. If current ratio is 4:1 and Liquid Ratio is 1 : 1, calculate value of Current Assets, Liquid Assets and Inventory.
(**Ans:** Current Assets Rs. 3,00,000, Liquid Assets Rs. 75,000 and Inventory Rs. 2,25,000)

6. Handa Ltd. has inventory of Rs. 20,000. Total liquid assets are Rs. 1,00,000 and quick ratio is 2 : 1. Calculate current ratio.
   (**Ans:** Current Ratio 2.4 : 1)
7. Calculate debt-equity ratio from the following information:

| | |
|---|---|
| Total Assets | Rs. 15,00,000 |
| Current Liabilities | Rs. 6,00,000 |
| Total Debts | Rs. 12,00,000 |

   (**Ans:** Debt-Equity Ratio 2 : 1.)
8. Calculate Current Ratio if:
   Inventory is Rs. 6,00,000; Liquid Assets Rs. 24,00,000; Quick Ratio 2 : 1.
   (**Ans:** Current Ratio 2.5 : 1)
9. Compute Inventory Turnover Ratio from the following information:

| | |
|---|---|
| Net Revenue from Operations | Rs. 2,00,000 |
| Gross Profit | Rs. 50,000 |
| Inventory at the end | Rs. 60,000 |
| Excess of inventory at the end over inventory in the beginning | Rs. 20,000 |

   (**Ans:** Inventory Turnover Ratio 3 times)
10. Calculate following ratios from the following information:
   (i) Current ratio (ii) Liquid ratio (iii) Operating Ratio (iv) Gross profit ratio

| | |
|---|---|
| Current Assets | Rs. 35,000 |
| Current Liabilities | Rs. 17,500 |
| Inventory | Rs. 15,000 |
| Operating Expenses | Rs. 20,000 |
| Revenue from Operations | Rs. 60,000 |
| Cost of Revenue from operation | Rs. 30,000 |

   (**Ans:** Current Ratio 2 : 1; Liquid Ratio 1.14 : 1; Operating Ratio 83.3%; Gross Profit Ratio 50%)
11. From the following information calculate:
   (i) Gross Profit Ratio (ii) Inventory Turnover Ratio (iii) Current Ratio (iv) Liquid Ratio (v) Net Profit Ratio (vi) Working Capital Ratio:

| | |
|---|---|
| Revenue from Operations | Rs. 25,20,000 |
| Net Profit | Rs. 3,60,000 |
| Cost of Revenue from Operations | Rs. 19,20,000 |
| Long-term Debts | Rs. 9,00,000 |
| Trade Payables | Rs. 2,00,000 |
| Average Inventory | Rs. 8,00,000 |
| Current Assets | Rs. 7,60,000 |

| | |
|---|---|
| Fixed Assets | Rs. 14,40,000 |
| Current Liabilities | Rs. 6,00,000 |
| Net Profit before Interest and Tax | Rs. 8,00,000 |

(**Ans:** Gross Profit Ratio 23.81%; Inventory Turnover Ratio 2.4 times; Current Ratio 2.6 : 1; Liquid Ratio 1.27 : 1; Net Profit Ratio 14.21%; Working Capital Ratio 2.625 times)

12. Compute Gross Profit Ratio, Working Capital Turnover Ratio, Debt Equity Ratio and Proprietary Ratio from the following information:

| | |
|---|---|
| Paid-up Share Capital | Rs. 5,00,000 |
| Current Assets | Rs. 4,00,000 |
| Revenue from Operations | Rs. 10,00,000 |
| 13% Debentures | Rs. 2,00,000 |
| Current Liabilities | Rs. 2,80,000 |
| Cost of Revenue from Operations | Rs. 6,00,000 |

(**Ans:** Gross Profit Ratio 40%; Working Capital Ratio 8.33 times; Debt–Equity Ratio 0.4 : 1; Proprietary Ratio 0.51 : 1)

13. Calculate Inventory Turnover Ratio if:

Inventory in the beginning is Rs. 76,250, Inventory at the end is 98,500, Gross Revenue from Operations is Rs. 5,20,000, Sales Return is Rs. 20,000, Purchases is Rs. 3,22,250.

(**Ans:** Inventory Turnover Ratio 3.43 times)

14. Calculate Inventory Turnover Ratio from the data given below:

| | |
|---|---|
| Inventory in the beginning of the year | Rs. 10,000 |
| Inventory at the end of the year | Rs. 5,000 |
| Carriage | Rs. 2,500 |
| Revenue from Operations | Rs. 50,000 |
| Purchases | Rs. 25,000 |

(**Ans:** Inventory Turnover Ratio 4.33 times)

15. A trading firm's average inventory is Rs. 20,000 (cost). If the inventory turnover ratio is 8 times and the firm sells goods at a profit of 20% on sales, ascertain the profit of the firm.

(**Ans:** Profit Rs. 40,000)

16. You are able to collect the following information about a company for two years:

| | *2015-16* | *2016-17* |
|---|---|---|
| Trade receivables on Apr. 01 | Rs. 4,00,000 | Rs. 5,00,000 |
| Trade receivables on Mar. 31 | | Rs. 5,60,000 |
| Stock in trade on Mar. 31 | Rs. 6,00,000 | Rs. 9,00,000 |
| Revenue from operations (at gross profit of 25%) | Rs. 3,00,000 | Rs. 24,00,000 |

Calculate Inventory Turnover Ratio and Trade Receivables Turnover Ratio

(**Ans:** Inventory Turnover Ratio 2.4 times, Trade Receivables Turnover Ratio 4.53 times)

17. From the following Balance Sheet and other information, calculate following ratios:

(i) Debt-Equity Ratio (ii) Working Capital Turnover Ratio (iii) Trade Receivables Turnover Ratio

***Balance Sheet as at March 31, 2017***

| Particulars | Note No. | Rs. |
|---|---|---|
| **I. Equity and Liabilities:** | | |
| **1. Shareholders' funds** | | |
| a) Share capital | | 10,00,000 |
| b) Reserves and surplus | | 9,00,000 |
| **2. Non-current Liabilities** | | |
| Long-term borrowings | | 12,00,000 |
| **3. Current Liabilities** | | |
| Trade payables | | 5,00,000 |
| **Total** | | **36,00,000** |
| **II. Assets** | | |
| **1. Non-current Assets** | | |
| Fixed assets | | |
| – Tangible assets | | 18,00,000 |
| **2. Current Assets** | | |
| a) Inventories | | 4,00,000 |
| b) Trade Receivables | | 9,00,000 |
| c) Cash and cash equivalents | | 5,00,000 |
| **Total** | | **36,00,000** |

Additional Information: Revenue from Operations Rs. 18,00,000

(**Ans:** Debt-Equity Ratio 0.63 : 1; Working Capital Turnover Ratio 1.39 times; Trade Receivables Turnover Ratio 2 times)

18. From the following information, calculate the following ratios:

i) Liquid Ratio

ii) Inventory turnover ratio

iii) Return on investment

| | Rs. |
|---|---|
| Inventory in the beginning | 50,000 |
| Inventory at the end | 60,000 |

| | |
|---|---|
| Revenue from operations | 4,00,000 |
| Gross Profit | 1,94,000 |
| Cash and Cash Equivalents | 40,000 |
| Trade Receivables | 1,00,000 |
| Trade Payables | 1,90,000 |
| Other Current Liabilities | 70,000 |
| Share Capital | 2,00,000 |
| Reserves and Surplus | 1,40,000 |
| (Balance in the Statement of Profit & Loss A/c) | |

(**Ans:** Liquid Ratio 0.54 : 1; Inventory Turnover Ratio 3.74 times; Return on Investment 41.17%)

19. From the following, calculate (a) Debt-Equity Ratio (b) Total Assets to Debt Ratio (c) Proprietary Ratio.

| | |
|---|---|
| Equity Share Capital | Rs. 75,000 |
| Preference Share Capital | Rs. 25,000 |
| General Reserve | Rs. 45,000 |
| Balance in the Statement of Profit & Loss | Rs. 30,000 |
| Debentures | Rs. 75,000 |
| Trade Payables | Rs. 40,000 |
| Outstanding Expenses | Rs. 10,000 |

(**Ans:** Debt-Equity Ratio 0.43 : 1; Total Assets to Debt Ratio 4 : 1; Proprietary Ratio 0.58 : 1)

20. Cost of Revenue from Operations is Rs. 1,50,000. Operating expenses are Rs. 60,000. Revenue from Operations is Rs. 2,50,000. Calculate Operating Ratio.

(**Ans:** Operating Ratio 84%)

21. Calculate the following ratio on the basis of following information:

(i) Gross Profit Ratio (ii) Current Ratio (iii) Acid Test Ratio (iv) Inventory Turnover Ratio (v) Fixed Assets Turnover Ratio

| | Rs. |
|---|---|
| Gross Profit | 50,000 |
| Revenue from Operations | 1,00,000 |
| Inventory | 15,000 |
| Trade Receivables | 27,500 |
| Cash and Cash Equivalents | 17,500 |
| Current Liablilites | 40,000 |
| Land & Building | 50,000 |
| Plant & Machinery | 30,000 |
| Furniture | 20,000 |

(**Ans:** (i) Gross Profit Ratio 50%; (ii) Current Ratio 1.5:1; (iii) Liquid Ratio 1.125 : 1, Inventory Turnover Ratio 3.33 times; (iv) Fixed Assets Turnover Ratio 1 : 1)

22. From the following information calculate Gross Profit Ratio, Inventory Turnover Ratio and Trade Receivable Turnover Ratio.

| | |
|---|---|
| Revenue from Operations | Rs. 3,00,000 |
| Cost of Revenue from Operations | Rs. 2,40,000 |
| Inventory at the end | Rs. 62,000 |
| Gross Profit | Rs. 60,000 |
| Inventory in the beginning | Rs. 58,000 |
| Trade Receivables | Rs. 32,000 |

(**Ans:** Gross Profit Ratio 20%; Inventory Turnover Ratio 4 times; Trade Receivables Turnover Ratio 9.4 times)

## Answers to Test your Understanding

**Test your Understanding – I**

(a) F, (b) T, (c) T, (d) F, (e) T, (F) F

**Test your Understanding – II**

(i) D, (ii) D, (iii) B, (iv) A, (v) B, (vi) D

**Test your Understanding – III**

(i) C, (ii) B, (iii) B, (iv) C, (v) C, (vi) C



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# Cash Flow Statement

6

**Learning Objectives**

*After studying this chapter, you will be able to :*

- *state the purpose and preparation of statement of cash flow statement;*
- *distinguish between operating activities, investing activities and financing activities;*
- *prepare the statement of cash flows using direct method;*
- *prepare the cash flow statement using indirect method.*

Till now you have learnt about the financial statements being primarily inclusive of Position Statement (showing the financial position of an enterprise as on a particular date) and Income Statement (showing the result of the operational activities of an enterprise over a particular period). There is also a third important financial statement known as *Cash flow statement,* which shows inflows and outflows of the cash and cash equivalents. This statement is usually prepared by companies which comes as a tool in the hands of users of financial information to know about the sources and uses of cash and cash equivalents of an enterprise over a period of time from various activities o*f an enterprise.* It has gained substantial importance in the last decade because of its practical utility to the users of financial information.

Accounting Standard-3 (AS-3), issued by The Institute of Chartered Accountants of India (ICAI) in June 1981, which dealt with a statement showing 'Changes in Financial Position', (Fund Flow Statement), has been revised and now deals with the preparation and presentation of Cash flow statement. The revised AS-3 has made it mandatory for all listed companies to prepare and present a cash flow statement along with other financial statements on annual basis. Hence, it may be noted, that Fund Flow statement is no more considered relevant in accounting and so not discussed here.

A cash flow statement provides information about the historical changes in cash and cash equivalents of an enterprise by classifying cash flows into operating, investing and financing activities. It requires that an enterprise should prepare a cash flow statement and should present it for each accounting period for which financial statements are presented. This chapter discusses this technique and explains the method of preparing a cash flow statement for an accounting period.

## 6.1 Objectives of Cash Flow Statement

A Cash flow statement shows inflow and outflow of cash and cash equivalents from various activities of a company during a specific period. The primary objective of cash flow statement is to provide useful information about cash flows (inflows and outflows) of an enterprise during a particular period under various heads, i.e., operating activities, investing activities and financing activities.

This information is useful in providing users of financial statements with a basis to assess the ability of the enterprise to generate cash and cash equivalents and the needs of the enterprise to utilise those cash flows. The economic decisions that are taken by users require an evaluation of the ability of an enterprise to generate cash and cash equivalents and the timing and certainty of their generation.

## 6.2 Benefits of Cash Flow Statement

Cash flow statement provides the following benefits :

- A cash flow statement when used along with other financial statements provides information that enables users to evaluate changes in net assets of an enterprise, its financial structure (including its liquidity and solvency) and its ability to affect the amounts and timings of cash flows in order to adapt to changing circumstances and opportunities.
- Cash flow information is useful in assessing the ability of the enterprise to generate cash and cash equivalents and enables users to develop models to assess and compare the present value of the future cash flows of different enterprises.
- It also enhances the comparability of the reporting of operating performance by different enterprises because it eliminates the effects of using different accounting treatments for the same transactions and events.
- It also helps in balancing its cash inflow and cash outflow, keeping in response to changing condition. It is also helpful in checking the accuracy of past assessments of future cash flows and in examining the relationship between profitability and net cash flow and impact of changing prices.

## 6.3 Cash and Cash Equivalents

As stated earlier, cash flow statement shows inflows and outflows of cash and cash equivalents from various activities of an enterprise during a particular period. As per AS-3, 'Cash' comprises cash in hand and demand deposits with banks, and 'Cash equivalents' means short-term highly liquid investments that are readily convertible into known amounts *of cash and which are subj*ect to an insignificant risk of changes in value. An investment normally qualifies as cash equivalents only when it has a short maturity, of say, three months or less from the date of acquisition. Investments in shares are excluded from cash equivalents unless they are in substantial cash equivalents. For example, preference shares of a company acquired shortly before their specific redemption date, provided there is only insignificant risk of failure of the company to repay the amount at maturity. Similarly, short-term marketable securities which can be readily converted into cash are treated as cash equivalents and is liquidable immediately without considerable change in value.

## 6.4 Cash Flows

'Cash Flows' implies movement of cash in and out due to some non-cash items. Receipt of cash from a non-cash item is termed as cash inflow while cash payment in respect of such items as cash outflow. For example, purchase of machinery by paying cash is cash outflow while sale proceeds received from sale of machinery is cash inflow. Other examples of cash flows include collection of cash from trade receivables, payment to trade payables, payment to employees, receipt of dividend, interest payments, etc.

Cash management includes the investment of excess cash in cash equivalents. Hence, purchase of marketable securities or short-term investment which constitutes cash equivalents is not considered while preparing cash flow statement.

## 6.5 Classification of Activities for the Preparation of Cash Flow Statement

You know that various activities of an enterprise result into cash flows (inflows or receipts and outflows or payments) which is the subject matter of a cash flow statement. As per AS-3, these activities are to be classified into three categories: (1) operating, (2) investing, and (3) financing activities so as to show separately the cash flows generated (or used) by (in) these activities. This helps the users of cash flow statement to assess the impact of these activities on the financial position of an enterprise and also on its cash and cash equivalents.

### 6.5.1 Cash from Operating Activities

Operating activities are the activities that constitute the primary or main activities of an enterprise. For example, for a company manufacturing garments, operating activities are procurement of raw material, incurrence of manufacturing expenses, sale of garments, etc. These are the principal revenue generating activities (or the main activities) of the enterprise and these activities are not investing or financing activities. The amount of cash from operations' indicates the internal solvency level of the company, and is regarded as the key indicator of the extent to which the operations of the enterprise have generated sufficient cash flows to maintain the operating capability of the enterprise, paying dividends, making of new investments and repaying of loans without recourse to external source of financing.

Cash flows from operating activities are primarily derived from the main activities of the enterprise. They generally result from the transactions and other events that enter into the determination of net profit or loss. Examples of cash flows from operating activities are:

*Cash Inflows from operating activities*

- cash receipts from sale of goods and the rendering of services.
- cash receipts from royalties, fees, commissions and other revenues.

*Cash Outflows from operating activities*

- Cash payments to suppliers for goods and services.
- Cash payments to and on behalf of the employees.
- Cash payments to an insurance enterprise for premiums and claims, annuities, and other policy benefits.
- Cash payments of income taxes unless they can be specifically identified with financing and investing activities.

The net position is shown in case of operating cash flows.

An enterprise may hold securities and loans for dealing or for trading purposes. In either case they represent Inventory specifically held for resale. Therefore, cash flows arising from the purchase and sale of dealing or trading securities are classified as operating activities. Similarly, cash advances and loans made by financial enterprises are usually classified as operating activities since they relate to main activity of that enterprise.

### 6.5.2 Cash from Investing Activities

As per AS-3, investing activities are the acquisition and disposal of long-term assets and other investments not included in cash equivalents. Investing activities relate to purchase and sale of long-term assets or fixed assets such as machinery, furniture, land and building, etc. Transactions related to long-term investment are also investing activities.

Separate disclosure of cash flows from investing activities is important because they represent the extent to which expenditures have been made for resources intended to generate future income and cash flows. Examples of cash flows arising from investing activities are:

*Cash Outflows from investing activities*

- Cash payments to acquire fixed assets including intangibles and capitalised research and development.
- Cash payments to acquire shares, warrants or debt instruments of other enterprises other than the instruments those held for trading purposes.
- Cash advances and loans made to third party (other than advances and loans made by a financial enterprise wherein it is operating activities).

*Cash Inflows from Investing Activities*

- Cash receipt from disposal of fixed assets including intangibles.
- Cash receipt from the repayment of advances or loans made to third parties (except in case of financial enterprise).
- Cash receipt from disposal of shares, warrants or debt instruments of other enterprises except those held for trading purposes.
- Interest received in cash from loans and advances.
- Dividend received from investments in other enterprises.

### *6.5.3 Cash from Financing Activities*

As the name suggests, financing activities relate to long-term funds or capital of an enterprise, e.g., cash proceeds from issue of equity shares, debentures, raising long-term bank loans, repayment of bank loan, etc. As per AS-3, financing activities are activities that result in changes in the size and composition of the owners' capital (including preference share capital in case of a company) and borrowings of the enterprise. Separate disclosure of cash flows arising from financing activities is important because it is useful in predicting claims on future cash flows by providers of funds ( both capital and borrowings ) to the enterprise. Examples of financing activities are:

*Cash Inflows from financing activities*

- Cash proceeds from issuing shares (equity or/and preference).
- Cash proceeds from issuing debentures, loans, bonds and other short/ long-term borrowings.

*Cash Outflows from financing activities*

- Cash repayments of amounts borrowed.
- Interest paid on debentures and long-term loans and advances.
- Dividends paid on equity and preference capital.

It is important to mention here that a transaction may include cash flows that are classified differently. For example, when the instalment paid in respect of a fixed asset acquired on deferred payment basis includes both interest and loan, the interest element is classified under financing activities and the loan element is classified under investing activities. Moreover, same activity may be classified differently for different enterprises. For example, purchase of shares is an operating activity for a share brokerage firm while it is investing activity in case of other enterprises.

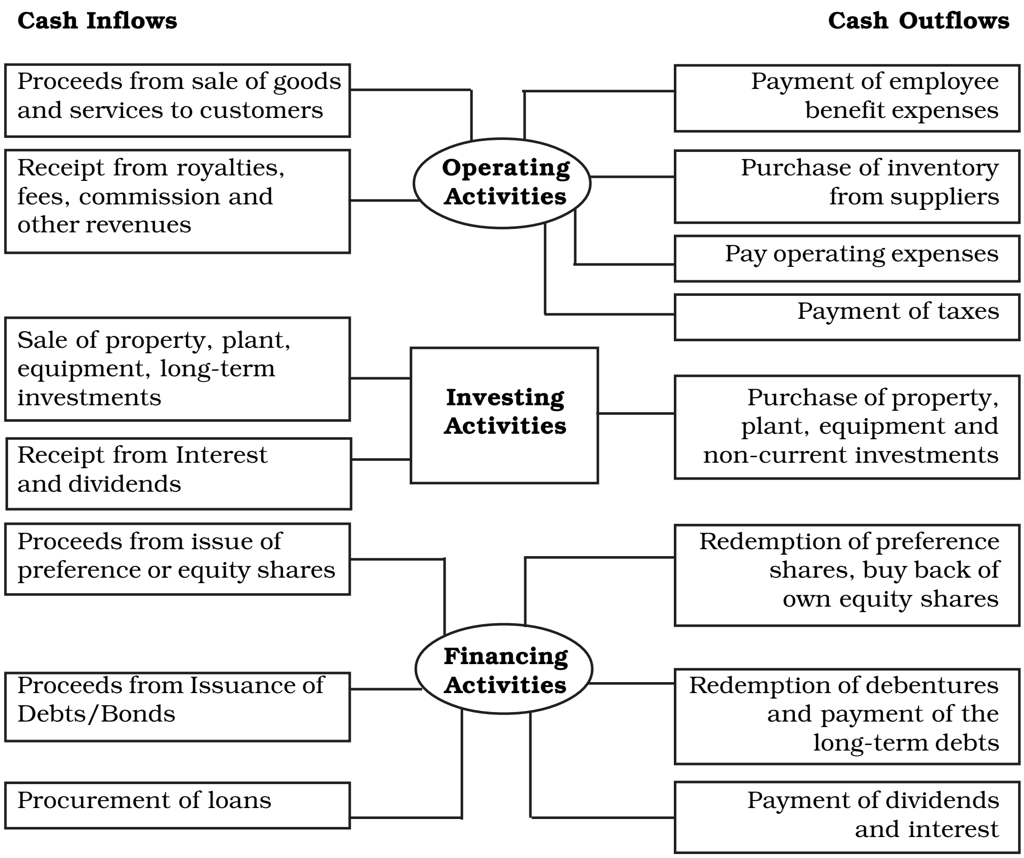


**Exhibit 6.1:** *Classification of Cash inflows and Cash Outflows Activities*

### *6.5.4 Treatment of Some Peculiar Items*

*Extraordinary items*

Extraordinary items are not the regular phenomenon, e.g., loss due to theft or earthquake or flood. Extraordinary items are non-recurring in nature and hence cash flows associated with extraordinary items should be classified and disclosed separately as arising from operating, investing or financing activities. This is done to enable users to understand their nature and effect on the present and future cash flows of an enterprise.

*Interest and Dividend*

In case of a financial enterprise (whose main business is lending and borrowing), interest paid, interest received and dividend received are classified as operating activities while dividend paid is a financing activity.

In case of a non-financial enterprise, as per AS-3, it is considered more appropriate that payment of interest and dividends are classified as financing activities whereas receipt of interest and dividends are classified as investing activities.

*Taxes on Income and Gains*

Taxes may be income tax (tax on normal profit), capital gains tax (tax on capital profits), dividend tax (tax on the amount distributed as dividend to shareholders). AS-3 requires that cash flows arising from taxes on income should be separately disclosed and should be classified as cash flows from operating activities unless they can be specifically identified with financing and investing activities. This clearly implies that:

- tax on operating profit should be classified as operating cash flows.
- dividend tax, i.e., tax paid on dividend should be classified as financing activity along with dividend paid.
- Capital gains tax paid on sale of fixed assets should be classified under investing activities.

*Non-cash Transactions*

As per AS-3, investing and financing transactions that do not require the use of cash or cash equivalents should be excluded from a cash flow statement. Examples of such transactions are – acquisition of machinery by issue of equity shares or redemption of debentures by issue of equity shares. Such transactions should be disclosed elsewhere in the financial statements in a way that provide all the relevant information about these investing and financing activities. Hence, assets acquired by issue of shares are not disclosed in cash flow statement due to non-cash nature of the transaction.

With these three classifications, Cash Flow Statement is shown in Exhibit 6.2.

**Cash Flow Statement**
**(Main heads only)**

| | |
|---|---|
| (A) Cash flows from operating activities | xxx |
| (B) Cash flows from investing activities | xxx |
| (C) Cash flows from financing activities | xxx |
| Net increase (decrease) in cash and cash equivalents (A + B + C) | xxx |
| + Cash and cash equivalents at the beginning | xxx |
| = Cash and cash equivalents at the end | xxxx |

**Exhibit 6.2 :** *Sharing Specimen Cash Flow Statement*

**Test your Understanding - I**

Classify the following activities into operating activities, investing activities, financing activities, cash equivalents.

| | | | |
|---|---|---|---|
| 1. | Purchase of machinery. | 2. | Proceeds from issuance of equity share capital. |
| 3. | Cash revenue from operations. | 4. | Proceeds from long-term borrowings. |
| 5. | Proceeds from sale of old machinery. | 6. | Cash receipt from trade receivables. |
| 7. | Trading commission received. | 8. | Purchase of non-current investment. |
| 9. | Redemption of preference shares. | 10. | Cash purchases. |
| 11. | Proceeds from sale of non-current investment. | 12. | Purchase of goodwill. |
| 13. | Cash paid to supplier. | 14. | Interim dividend paid on equity shares. |
| 15. | Employee benefits expenses paid. | 16. | Proceeds from sale of patents. |
| 17. | Interest received on debentures held as investments. | 18. | Interest paid on long-term borrowings. |
| 19. | Office and administrative expenses paid. | 20. | Manufacturing overheads paid. |
| 21. | Dividend received on shares held as investment. | 22. | Rent received on property held as investment. |
| 23. | Selling and distribution expenses paid. | 24. | Income tax paid. |
| 25. | Dividend paid on preferences shares. | 26. | Under-writing commission paid. |
| 27. | Rent paid. | 28. | Brokerage paid on purchase of non-current investment. |
| 29. | Bank overdraft. | 31. | Short-term deposit. |
| 30. | Cash credit. | 33. | Refund of income-tax received. |
| 32. | Marketable securities. | | |

## 6.6 Ascertaining Cash Flow from Operating Activities

Operating activities are the main source of revenue and expenditure in an enterprise. Therefore, the ascertainment of cash flows from operating activities need special attention.

As per AS-3, an enterprise should report cash flows from operating activities either by using :

- Direct method whereby major classes of gross cash receipts and gross cash payments are disclosed;

or

- Indirect method whereby net profit or loss is duly adjusted for the effects of (1) transactions of a non-cash nature, (2) any deferrals or accruals of past/future operating cash receipts, and (3) items of income or expenses associated with investing or financing cash flows. It is important to mention here that under indirect method, the starting point is net profit/loss before taxation and extra ordinary items as per Statement of Profit and Loss of the enterprise. Then this amount is for non-cash items, etc., adjusted for ascertaining cash flows from operating activities.

Accordingly, cash flow from operating activities can be determined using either the Direct method or the Indirect method. These methods are discussed in detail as follows.

### *6.6.1 Direct Method*

As the name suggests, under direct method, major heads of cash inflows and outflows (such as cash received from trade receivables, employee benefits expenses paid, etc.) are considered.

It is important to note here that items are recorded on accrual basis in statement of profit and loss. Hence, certain adjustments are made to convert them into cash basis such as the following :

1. Cash receipts from customers = Revenue from operations + Trade receivables in the beginning – Trade receivables in the end.
2. Cash payments to suppliers = Purchases + Trade Payables in the beginning – Trade Payables in the end.
3. Purchases = Cost of Revenue from Operations – Opening Inventory + Closing Inventory.
4. Cash expenses = Expenses on accrual basis + Prepaid expenses in the beginning and Outstanding expenses in the end – Prepaid expenses in the end and Outstanding expenses in the beginning.

*However, the following items are not to be considered:*

1. Non-cash items such as depreciation , discount on shares, etc., be written-off.
2. Items which are classified as investing or financing activities such as interest received, dividend paid, etc.

As per AS-3, under the direct method, information about major classes of gross cash receipts and cash payments may be obtained either–

- from the accounting records of the enterprise, or
- by adjusting revenue from operation, cost of revenue from operations and other items in the statement of profit or loss for the following:
  - changes during the period in inventories and trade receivables and payables;
  - other non-cash items; and
  - other items for which cash effects are investing or financing cash flows.

Exhibit 6.3 shows the proforma of cash flows from operating activities using direct method.

**Cash Flows from Operating Activities (Direct Method)**

| | | |
|---|---|---|
| *Cash flows from operating activities:* | | |
| Cash receipts from customers | | xxx |
| (–) | Cash paid to suppliers and employees | (xxx) |
| = | Cash generated from operations | **xxx** |
| (–) | Income tax paid | (xxx) |
| = | Cash flow before extraordinary items | **xxx** |
| +/– | Extraordinary items | xxx |
| = | *Net cash from operating activities* | **xxxx** |

**Exhibit 6.3 :** *Proforma of Cash Flows from Operating Activities*

***Illustration 1***

From the following information, calculate cash flow from operating activities using direct method.

**Statement of Profit and Loss**
**for the year ended on March 31, 2017**

| | *Particulars* | *Note* | *Figures for Current reporting period* |
|---|---|---|---|
| i) | Revenue from operations | | 2,20,000 |
| ii) | Other Income | | — |
| iii) | Total revenue (i+ii) | | 2,20,000 |
| iv) | Expenses | | |
| | Cost of materials consumed | | 1,20,000 |
| | Employees benefits expenses | | 30,000 |
| | Depreciation | | 20,000 |
| | Other expenses | | |
| | Insurance Premium | | 8,000 |
| | Total expenses | | 1,78,000 |
| v) | Profit before tax (iii-iv) | | 42,000 |
| | Less Income tax | | (10,000) |
| vi) | Profit after tax | | 32,000 |

*Additional information:*

| *Particulars* | *April 01, 2016* *Rs* | *March 31, 2017* *Rs* |
|---|---|---|
| Trade receivables | 33,000 | 36,000 |
| Trade payables | 17,000 | 15,000 |
| Inventory | 22,000 | 27,000 |
| Outstanding employees benefits expenses | 2,000 | 3,000 |
| Prepaid insurance | 5,000 | 5,500 |
| Income tax outstanding | 3,000 | 2,000 |

***Solution:***

**Cash Flows from Operating Activities**

| *Particulars* | *(Rs)* |
|---|---|
| Cash receipts from customers | 2,17,000 |
| Cash Paid to suppliers | (1,27,000) |
| Cash Paid to employees | (29,000) |
| Cash Paid for Insurance premium | (8,500) |
| Cash generated from operations | 52,500 |
| Income Tax paid | (11,000) |
| Net Cash Inflow from Operations | **41,500** |

*Working Notes:*

1. Cash Receipts from Customers is calculated as under :
   Cash Receipts from Customers = Revenue from Operations + Trade Receivables in the beginning – Trade Receivables in the end
   = Rs 2,20,000 + Rs 33,000 – Rs 36,000
   = Rs 2,17,000
2. Purchases = Cost of Revenue from Operations – Opening Inventory + Closing Inventory
   = Rs 1,20,000 – Rs 22,000 + Rs 27,000
   = Rs 1,25,000
3. Cash payment to suppliers = Purchases + Trade Payables in the beginning – Trade Payables in the end
   = Rs 1,25,000 + Rs 17,000 – Rs 15,000
   = Rs 1,27,000
4. Cash Expenses = Expenses on Accrual basis – Prepaid Expenses in the beginning and Outstanding Expenses in the end + Prepaid Expenses in the end and Outstanding Expenses in the beginning
5. Cash Paid to Employees = Rs 30,000 + Rs 2,000 – Rs 3,000
   = Rs 29,000
6. Cash Paid for Insurance Premium = Rs 8,000 – Rs 5,000 + Rs 5,500
   = Rs 8,500
7. Income Tax Paid = Rs 10,000+Rs 3,000 – Rs 2,000
   = Rs 11,000
8. It is important to note here that there are no extraordinary items.

### 6.6.2 Indirect Method

Indirect method of ascertaining cash flow from operating activities begins with the amount of net profit/loss. This is so because statement of profit and loss incorporates the effects of all operating activities of an enterprise. However, Statement of Profit and Loss is prepared on accrual basis (and not on cash basis). Moreover, it also includes certain non-operating items such as interest paid, profit/loss on sale of fixed assets, etc.) and non-cash items (such as depreciation, goodwill to be written-off, etc.. Therefore, it becomes necessary to adjust the amount of net profit/loss as shown by Statement of Profit and Loss for arriving at cash flows from operating activities. Let us look at the example :

**Statement of Profit and Loss Account**
**for the year ended March 31, 2017**

| | *Particulars* | *Note* | *Figures in Rs* |
|---|---|---|---|
| i) | Revenue from Operations | | 1,00,000 |
| ii) | Other Income | 1 | 2,000 |
| iii) | Total Revenues (i+ii) | | 1,02,000 |
| iv) | Expenses | | |
| | Cost of Materials Consumed | | 30,000 |
| | Purchases of stock-in-trade | | 10,000 |
| | Employees Benefits Expenses | | 10,000 |
| | Finance Costs | | 5,000 |
| | Depreciation | | 5,000 |
| | Other Expenses | | 12,000 |
| | | | 72,000 |
| v) | Profit before Tax (iii-iv) | | 30,000 |

Note: Other income includes profit on sale of land.

The above Statement of Profit and Loss shows the amount of net profit of Rs 30,000. This has to be adjusted for arriving cash flows from operating activities. Let us take various items one by one.

1. *Depreciation* is a non-cash item and hence, Rs 5,000 charged as depreciation does not result in any cash flow. Therefore, this amount must be added back to the net profit.
2. *Finance costs* of Rs 5,000 is a cash outflow on account of financing activity. Therefore, this amount must also be added back to net profit while calculating cash flows from operating activities. This amount of finance cost will be shown as an outflow under the head of financing activities.
3. *Other income includes profit on sale of land:* It is cash inflow from investing activity. Hence, this amount must be deducted from the amount of net profit while calculating cash flows from operating activities.

The above example gives you an idea as to how various adjustments are made in the amount of net profit/loss. Other important adjustments relate to changes in working capital which are necessary (i.e., items of current assets and current liabilities) to convert net profit/loss which is based on accrual basis into cash flows from operating activities. Therefore, the increase in current assets and decrease in current liabilities are deducted from the operating profit, and the decrease in current assets and increase in current liabilities are added to the operating profit so as to arrive at the exact amount of net cash flow from operating activities.

As per AS-3, under indirect method, net cash flow from operating activities is determined by adjusting net profit or loss for the effect of :

- Non-cash items such as depreciation, goodwill written-off, provisions, deferred taxes, etc., which are to be added back.
- All other items for which the cash effects are investing or financing cash flows. The treatment of such items depends upon their nature. All investing and financing incomes are to be deducted from the amount of net profits while all such expenses are to be added back. For example, finance cost which is a financing cash outflow is to be added back while other income such as interest received which is investing cash inflow is to be deducted from the amount of net profit.
- Changes in current assets and liabilities during the period. Increase in current assets and decrease in current liabilities are to be deducted while increase in current liabilities and decrease in current assets are to be added up.

Exhibit 6.4 shows the proforma of calculating cash flows from operating activities as per indirect method.

The direct method provides information which is useful in estimating future cash flows. But such information is not available under the indirect method. However, in practice, indirect method is mostly used by the companies for arriving at the net cash flow from operating activities.

**Cash Flows from Operating Activities**
**(Indirect Method)**

| | | |
|---|---|---|
| | *Net Profit/Loss before Tax and Extraordinary Items* | |
| + | Deductions already made in Statement of Profit and Loss on account of Non-cash items such as Depreciation, Goodwill to be Written-off. | xxx |
| + | Deductions already made in Statement of Profit and Loss on Account of Non-operating items such as Interest. | xxx |
| – | Additions (incomes) made in Statement of Profit and Loss on Account of Non-operating items such as Dividend received, Profit on sale of Fixed Assets. | xxx<br>xxx |
| | *Operating Profit before Working Capital changes* | |
| + | Increase in Current liabilities | xxx |
| + | Decrease in Current assets | xxx |
| – | Increase in Current assets | xxx |

| | |
|---|---|
| – Decrease in Current Liabilities | xxx |
| Cash Flows from Operating Activities before Tax and Extraordinary Items | xxx |
| – Income Tax Paid | xxx |
| +/– Effects of Extraordinary Items | xxx |
| Net Cash from Operating Activities | **xxx** |

**Exhibit 6.4:** *Proforma of Cash Flows from Operating Activities (Indirect Method)*

As stated earlier, while working out the cash flow from operating activities, the starting point is the 'Net profit before tax and extraordinary items' and not the 'Net profit as per Statement of Profit and Loss'. Income tax paid is deducted as the last item to arrive at the net cash flow from operating activities.

### *Illustration 2*

Using the data given in Illustration 1, calculate cash flows from operating activities using indirect method.

***Solution:***

**Cash Flows from Operating Activities**

| *Particulars* | *(Rs)* |
|---|---|
| *(Net Profit before Taxation and Extraordinary Items (Note 1)* | 42,000 |
| Adjustments for– | |
| + Depreciation | 20,000 |
| = Operating Profit before working capital changes | 62,000 |
| – Increase in Trade Receivables | (3,000) |
| – Increase in Inventories | (5,000) |
| – Increase in Prepaid Insurance | (500) |
| – Decrease in Trade Payables | (2,000) |
| + Increase in Outstanding Employees Benefits Expenses | +1,000 |
| = Cash generated from Operations | 52,500 |
| – Income tax paid | (11,000) |
| = *Net cash from Operating Activities* | **41,500** |

*You will notice that the amount of cash flows from operating activities are the same whether we use direct method or indirect method for its calculation.*

*Working Notes :*

The net profit before taxation and extraordinary items has been worked out as under:

| | | |
|---|---|---|
| Net Profit | = | Rs 32,000 |
| + Income Tax | = | Rs 10,000 |
| = Net Profit before Tax and Extraordinary Items | = | Rs 42,000 |

### *Illustration 3*

Calculate cash flows from operating activities from the following information.

**Statement of Profit and Loss for the year ended March 31, 2017**

| *Particulars* | *Note No.* | *Amount Rs* |
|---|---|---|
| i) Revenue from Operations | | 50,000 |
| ii) Other Income | 1 | 5,000 |
| iii) Total Revenue (i+ii) | | 55,000 |
| iv) Expenses | | |
| Cost of Materials Consumed | | 15,000 |
| Employees Benefits Expenses | | 10,000 |
| Depreciation and Amortisation Expenses | 2 | 7,000 |
| Other Expenses | 3 | 21,000 |
| | | 53,000 |
| v) Profit before Tax (iii-iv) | | 2,000 |

*Working Notes:*

1. Other Income = Profit on Sale of Machinery (Rs 2,000 ) + Income Tax Refund (Rs 3,000)
   = Rs 5,000
2. Depreciation and Amortisation Expenses = Depreciation (Rs 5,000) + Goodwill Amortised (Rs 2,000)
   = Rs 7,000
3. Other Expenses = Rent (Rs 10,000) + Loss on Sale of Equipment (Rs 3,000) + Provision for Taxation (Rs 8,000)
   = Rs 21,000

*Additional Information:*

| | April 01, 2016 Rs | March 31, 2017 Rs |
|---|---|---|
| Provision for Taxation | 10,000 | 13,000 |
| Rent Payable | 2,000 | 2,500 |
| Trade Payables | 21,000 | 25,000 |
| Trade Receivables | 15,000 | 21,000 |
| Inventories | 25,000 | 22,000 |

### *Solution:*

**Cash Flows from Operating Activities**

| *Particulars* | *(Rs)* |
|---|---|
| Net profit before taxation, and extraordinary items | 7,000 |
| Adjustments for: | |
| + Depreciation | 5,000 |
| + Loss on sale of equipment | 3,000 |
| + Goodwill amortised | 2,000 |

| | |
|---|---|
| – Profit on sale of machinery | (2,000) |
| Operating Profit before Working capital changes | 15,000 |
| – Increase in Trade receivables | (6,000) |
| + Decrease in Inventories | 3,000 |
| + Increase in Trade payables | 4,000 |
| + Increase in Rent payable | 500 |
| Cash generated from operations | 16,500 |
| Income Tax paid | (5,000) |
| Income Tax refund | 3,000 |
| Net Cash from Operating activities | **14,500** |

*Working Notes:*

1. Net profit before taxation & extraordinary item = Rs 2,000 + Rs 8,000 – Rs 3,000
   = Rs 7,000
2. Income tax paid during the year has been ascertained by preparing provision for taxation account as follows:

**Provision for taxation Account**

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Cash (Income tax paid during the year :*Balancing Figure)* | | 5,000 | Balance b/d | | 10,000 |
| | | | Profit and Loss | | 8,000 |
| Balance c/d | | 13,000 | | | |
| | | **18,000** | | | **18,000** |

***Illustration 4***

Charles Ltd., made a profit of Rs 1,00,000 after charging depreciation of Rs 20,000 on assets and a transfer to general reserve of Rs 30,000. The goodwill amortised was Rs 7,000 and gain on sale of machinery was Rs 3,000. Other information available to you ( changes in the value of current assets and current liabilities) are trade receivables showed an increase of Rs 3,000; trade payables an increase of Rs 6,000; prepaid expenses an increase of Rs 200; and outstanding expenses a decrease of Rs 2,000. Ascertain cash flow from operating activities.

***Solution:***

**Cash Flows from Operating Activities**

| *Particulars* | *(Rs)* |
|---|---|
| Net Profit before Taxation | 1,30,000 |
| Adjustment for Non-cash and Non-operating Items : | |
| + Depreciation | 20,000 |
| + Goodwill amortised | 7,000 |
| – Gain on sale of machinery | (3,000) |
| Operating profit before working capital | **1,54,000** |
| Adjustment for working capital charges : | |
| – Increase in Trade receivables | (3,000) |
| + Increase in Trade payables | 6,000 |
| – Increase in Prepaid expenses | (200) |
| – Decrease in Outstanding expenses | (2,000) |
| = Net Cash from Operating Activities | **1,54,800** |

*Working Notes :*

Calculation of Net Profit before Taxation and Extraordinary items:

| | |
|---|---|
| (1) Net Profit | = Rs 1,00,000 |
| + Transfer to General reserve | = Rs 30,000 |
| | = Rs 1,30,000 |

**Do it Yourself**

**Statement of Profit and Loss**
**for the year ending 31 March, 2017**

| *Particulars* | *Note* | *Figures in Rs* |
|---|---|---|
| i) Revenue from Operations | 1 | 40,00,000 |
| ii) Other Income | 2 | 21,00,000 |
| iii) Total Revenues (i+ii) | | **61,00,000** |
| iv) Expenses | | |
| Cost of Materials Consumed | 3 | 20,00,000 |
| Changes in inventories of finished goods | 4 | 1,00,000 |
| Depreciation and Amortisation expenses | 5 | 3,80,000 |
| Other expenses | 6 | 20,40,000 |
| **Total expenses** | | **45,20,000** |
| v) Profit before Tax (iii-iv) | | 15,80,000 |

*Working Notes:*

| | | | Rs |
|---|---|---|---|
| 1. | Cash revenue from operations | | 8,00,000 |
| | Credit revenue from operations | | 34,00,000 |
| | Less: Returns | | (2,00,000) |
| | Net Revenue from Operations | | **40,00,000** |
| 2. | Trading commission | | 20,40,000 |
| | Discount received from suppliers | | 60,000 |
| | Other income | | **21,00,000** |
| 3. | Cost of materials consumed paid in cash | 4,00,000 | |
| | Cost of materials consumed bought on credit | 17,00,000 | |
| | Less: Returns | (1,00,000) | |
| | Cost of materials consumed (Net) | **20,00,000** | |

4. Changes in Inventories of finished goods = Opening inventory – Closing inventory
   = Rs 2,00,000 – Rs 1,00,000
   = Rs 1,00,000

5. Depreciation and Amortisation expenses = Depreciation + Amortisation expenses
   = Rs 3,80,000 + 0
   = Rs 3,80,000

6. Other expenses = 10,20,000 (Administrative expenses) +1,20,000 (Discount allowed to customers) + 1,00,000 (Bad debts) + 8,00,000 (Provision for tax)
   = Rs 20,40,000

*Additional Information:*

| | *(Rs)* | *(Rs)* |
|---|---|---|
| Trade Receivables | 20,00,000 | 40,00,000 |
| Trade Payables | 20,00,000 | 10,00,000 |
| Other Expenses payable (administrative) | 10,000 | 20,000 |
| Prepaid Administrative Expenses | 20,000 | 10,000 |
| Outstanding Trading Expenses | 20,000 | 40,000 |
| Advance Trading Expenses | 40,000 | 20,000 |
| Provision for Taxation | 10,00,000 | 12,00,000 |

Ascertain Cash from Operations. Show your workings clearly.

2. From the following information calculate net cash from operations:

| *Particulars* | *(Rs)* |
|---|---|
| Operating Profit after Provision for Tax of Rs 1,53,000 | 6,28,000 |
| Insurance proceeds from the famine settlement | 1,00,000 |
| Proposed Dividend for the current year | 72,000 |

| | |
|---|---|
| Depreciation | 1,40,000 |
| Loss on Sale of Machinery | 30,000 |
| Profit on Sale of Investment | 20,000 |
| Dividend Received on Investments | 6,000 |
| Decrease in Current Assets (other than cash and cash equivalents) | 10,000 |
| Increase in Current Liabilities | 1,51,000 |
| Increase in Current Assets other than Cash and Cash Equivalents | 6,00,000 |
| Decrease in Current Liabilities | 64,000 |
| Income Tax Paid | 1,18,000 |
| Refund of Income Tax Received | 3,000 |

**Test your Understanding – II**

1. Choose one of the two alternatives given below and fill in the blanks in the following statements:

(a) If the net profits earned during the year is Rs 50,000 and the amount of debtors in the beginning and the end of the year is Rs 10,000 and Rs 20,000 respectively, then the cash from operating activities will be equal to Rs _______________ (Rs 40,000/Rs 60,000)

(b) If the net profits made during the year are Rs 50,000 and the bills receivables have decreased by Rs 10,000 during the year then the cash flow from operating activities will be equal to Rs _____________ (40,000/Rs 60,000)

(c) Expenses paid in advance at the end of the year are _____________ the profit made during the year (added to/deducted from).

(d) An increase in accrued income during the particular year is _____________ the net profit (added to/deducted from).

(e) Goodwill amortised is _____________ the profit made during the year for calculating the cash flow from operating activities (added to/ deducted from).

(f) For calculating cash flow from operating activities, provision for doubtful debts is _____________ the profit made during the year (added to/ deducted from).

2. While computing cash from operating activities, indicate whether the following items will be added or subtracted from the net profit- if not to be considered, write NC

*Items:* *Treatment*

(a) Increase in the value of creditors

(b) Increase in the value of patents

(c) Decrease in prepaid expenses

(d) Decrease in income received in advance

(e) Decrease in value of inventory

(f) Increase in share capital
(g) Increase in the value of trade receivables
(h) Increase in the amount of outstanding expenses
(i) Conversion of debentures into shares
(j) Decrease in the value of trade payables
(k) Increase in the value of trade receivables
(l) Decrease in the amount of accrued income.

Sometimes, neither the amount of net profit is specified nor the Statement of profit and loss is given. In such a situation, the amount of net profit can be worked out by comparing the balances of Statement of Profit and Loss given in the comparative balance sheets for two years. The difference is treated as the net profit for the year; and, then, by adjusting it with the amount of provision for tax made during the year (as worked out by comparing the provision for tax balances of two years given in balance sheets), the amount of 'Net Profit before tax' can be ascertained (see Illustration 7 and 8).

## 6.7 Ascertainment of Cash Flow from Investing and Financing Activities

The details of item leading inflows and outflows from investing and financing activities have already been outlined. While preparing the cash flow statement, all major items of gross cash receipts, gross cash payments, and net cash flows from investing and financing activities must be shown separately under the headings 'Cash Flow from Investing Activities' and 'Cash Flow from Financing Activities' respectively.'

The ascertainment of net cash flows from investing and financing activities have been briefly dealt with in Illustrations 5 and 6.

### *Illustration 5*

Welprint Ltd. has given you the following information:

| | *(Rs)* |
|---|---|
| Machinery as on April 01, 2016 | 50,000 |
| Machinery as on March 31, 2017 | 60,000 |
| Accumulated Depreciation on April 01, 2016 | 25,000 |
| Accumulated Depreciation on March 31, 2017 | 15,000 |

During the year, a Machine costing Rs 25,000 with Accumulated Depreciation of Rs 15,000 was sold for Rs 13,000.

Calculate cash flow from Investing Activities on the basis of the above information.

**Solution:**

| *Cash Flows from Investing Activities* | *(Rs)* |
|---|---|
| Sale of Machinery | 13,000 |
| Purchase of Machinery | (35,000) |
| Net cash used in Investing Activities | **(22,000)** |

*Working Notes:*

**Machinery Account**

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Balance b/d | | 50,000 | Cash (proceeds from sale of machine) | | 13,000 |
| Statement of Profit and Loss (profit on sale of machine) | | 3,000 | Accumulated Depreciation | | *15,000* |
| Cash (*balancing figure:new machinery purchased*) | | 35,000 | Balance c/d | | 60,000 |
| | | **88,000** | | | **88,000** |

**Accumulated Depreciation Account**

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Machinery | | 15,000 | Balance b/d | | 25,000 |
| Balance c/d | | 15,000 | Statement of Profit and Loss (Depreciation provided during the year) | | 5,000 |
| | | **30,000** | | | **30,000** |

***Illustration 6***

From the following information, calculate cash flows from financing activities:

| | April 1, 2016 (Rs) | March 31, 2017 (Rs) |
|---|---|---|
| Long-term Loans | 2,00,000 | 2,50,000 |

During the year, the company repaid a loan of Rs 1,00,000.

***Solution:***

| **Cash flows from Financing Activities** | |
|---|---|
| Proceeds from long-term borrowings | 1,50,000 |
| Repayment of long-term borrowings | (1,00,000) |
| Net cash inflow from Financing Activities | *50,000* |

*Working Notes:*

**Long-term Loan Account**

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Cash (loan repaid) | | 1,00,000 | Balance b/d | | 2,00,000 |
| Balance c/d | | 2,50,000 | Cash (new loan raised) | | 1,50,000 |
| | | **3,50,000** | | | **3,50,000** |

**Do it Yourself**

1. From the following particulars, calculate cash flows from investing activities:

| | *Purchased (Rs)* | *Sold (Rs)* |
|---|---|---|
| Plant | 4,40,000 | 50,000 |
| Investments | 1,80,000 | 1,00,000 |
| Goodwill | 2,00,000 | — |
| Patents | — | 1,00,000 |

Interest received on debentures held as investment Rs 60,000

Dividend received on shares held as investment Rs 10,000

A plot of land had been purchased for investment purposes and was let out for commercial use and rent received Rs 30,000.

2. From the following Information, calculate cash flows from investing and financing activities:

| *Particulars* | *2016* | *2017* |
|---|---|---|
| Machine at cost | 5,00,000 | 9,00,000 |
| Accumulated Depreciation | 3,00,000 | 4,50,000 |
| Equity Shares Capital | 28,00,000 | 35,00,000 |
| Bank Loan | 12,50,000 | 7,50,000 |

In year 2017, machine costing Rs 2,00,000 was sold at a profit of Rs 1,50,000, Depreciation charged on machine during the year 2015 amounted to Rs 2,50,000.

## 6.8 Preparation of Cash Flow Statement

As stated earlier cash flow statement provides information about change in the position of Cash and Cash Equivalents of an enterprise, over an accounting period. The activities contributing to this change are classified into operating, investing and financing. The methology of working out the net cash flow (or use) from all the three activities for an accounting period has been explained in details and a brief format of Cash Flow Statement has also been given in Exhibit 6.2. However, while preparing a cash flow statement, full details of inflows and outflows are given under these heads including the net cash flow (or use). The aggregate of the net 'cash flows (or use) is worked out and is shown as 'Net Increase/Decrease in cash and Cash Equivalents' to which the amount of 'cash and cash equivalent at the beginning' is added and thus the amount of 'cash and cash equivalents at the end' is arrived at as shown in Exhibit 6.2. This figure will be the same as the total amount of cash in hand, cash at bank and cash equivalants (if any) given in the balance sheet (see Illustrations 7 to 10). Another point that needs to be noted is that when cash flows from operating activities are worked out by an indirect method and shown as such in the cash flow statement, the statement itself is termed as 'Indirect method cash flow statement'. Thus, the Cash flow statements prepared in Illustrations 7, 8 and 9 fall under this category as the cash flows from operating activities have been worked out by indirect method. Similarly, if the cash flows from operating activities are worked by direct method while preparing the cash flow statement, it will be termed as 'direct method Cash Flow Statement'. Illustration 10 shows both types of Cash Flow Statement. However, unless it is specified clearly as to which method is to be used, the cash flow statement may preferably be prepared by an indirect method as is done by most companies in practice.

### *Illustration 7*

From the following information, prepare Cash Flow Statement for Pioneer Ltd.

**Balance Sheet of Pioneer Ltd., as on March 31, 2017**

| *Particulars* | *Note No.* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | 1 | 7,00,000 | 5,00,000 |
| b) Reserve and surplus | 2 | 3,50,000 | 2,00,000 |
| 2. Non-current Liabilities | | | |
| Long-term borrowings: Bank Loan | | 50,000 | 1,00,000 |
| 3. Current Liabilities | | | |
| a) Trade payables | | 45,000 | 50,000 |
| b) Other current liabilities: outstanding rent | | 7,000 | 5,000 |
| c) Short-term provisions | 3 | 1,20,000 | 80,000 |
| **Total** | | **12,72,000** | **9,35,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | | | |
| (i) Tangible assets | 4 | 5,00,000 | 5,00,000 |
| (ii) Intangible assets | 5 | 95,000 | 1,00,000 |
| b) Non-current investments | | 1,00,000 | - |
| 2. Current assets | | | |
| a) Inventories | | 1,30,000 | 50,000 |
| b) Trade receivables | | 1,20,000 | 80,000 |
| c) Cash and cash equivalents | 6 | 3,27,000 | 2,05,000 |
| **Total** | | **12,72,000** | **9,35,000** |

Notes to Accounts:

| *Particulars* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|
| 1. Equity Share Capital | **7,00,000** | **5,00,000** |
| 2. Reserve and Surplus<br>Surplus: i.e., Balance in Statement of Profit and Loss | **3,50,000** | **2,00,000** |

| | | |
|---|---|---|
| 3. Short-term Provision: | | |
| Proposed Dividend | 70,000 | 50,000 |
| Provision for Taxation | 50,000 | 30,000 |
| | **1,20,000** | **80,000** |
| 4. Fixed Assets | | |
| – Tangible assets | | |
| – Equipments | 2,30,000 | 2,00,000 |
| – Furniture | 2,70,000 | 3,00,000 |
| | **5,00,000** | **5,00,000** |
| 5. Intangible Assets | | |
| Patents | **95,000** | **1,00,000** |
| 6. Cash and cash equivalents | | |
| i) Cash | 27,000 | 5,000 |
| ii) Bank balance | 3,00,000 | 2,00,000 |
| | **3,27,000** | **2,05,000** |

During the year, equipment costing Rs 80,000 was purchased.
Loss on Sale of equipment amounted to Rs 5,000. Depreciation of Rs 15,000 and Rs 3,000 charged on equipments and furniture.

***Solution:***

**Cash Flow Statement**

| | *Particulars* | *(Rs)* |
|---|---|---|
| **I.** | **Cash flows from Operating Activities :** | |
| | Net profit before taxation & extraordinary items | 2,70,000 |
| | Provision for : | |
| | Depreciation on equipment | 15,000 |
| | Depreciation on furniture | 30,000 |
| | Patents written-off | 5,000 |
| | Loss on sale of equipment | 5,000 |
| | Operating Profit before Working capital Changes | 3,25,000 |
| | – Decrease in Trade payables | (5,000) |
| | + Increase in Outstanding rent | 2,000 |
| | – Increase in Trade receivables | (40,000) |
| | – Increase in inventories | (80,000) |
| | Cash generated from Operating activities | 2,02,000 |
| | (–) Tax paid | (30,000) |
| A. | Cash Inflows from Operating Activities | 1,72,000 |
| **II.** | **Cash flows from Investing Activities:** | |
| | Proceeds from sale of equipments | 30,000 |
| | Purchase of new equipment | (80,000) |
| | Purchase of Investments | (1,00,000) |
| B. | Cash used in Investing Activities | (1,50,000) |

| | | |
|---|---|---|
| **III.** | **Cash flows from Financing Activities:** | |
| | Issues of equity share capital | 2,00,000 |
| | Repayment of bank loan | (50,000) |
| | Payment of dividend | (50,000) |
| C. | Cash Inflows from Financing Activities | **1,00,000** |
| | Net increase in Cash & Cash Equivalents (A+B+C) | 1,22,000 |
| | + Cash and Cash Equivalents in the beginning | 2,05,000 |
| | Cash and Cash Equivalents in the end | **3,27,000** |

*Working Notes:*

(1)

**Equipment Account**

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Balance b/d | | 2,00,000 | Depreciation (balancing figure) | | 15,000 |
| Cash | | 80,000 | Bank | | 30,000 |
| | | | Statement of Profit & Loss (Loss on sale) | | 5,000 |
| | | | Balance c/d | | 2,30,000 |
| | | **2,80,000** | | | **2,80,000** |

(2) Patents of Rs 5,000 (i.e., Rs 1,00,000 – Rs 95,000) were written-off during the year, and depreciation on furniture Rs 30,000. (Rs 3,00,000 – Rs 2,70,000)

(3) It is assumed that dividend of Rs 50,000 and tax of Rs 30,000 provided in 2015-2016 has been paid during the year 2016-17. Hence, proposed dividend and provision for tax during the year amounts to Rs 70,000 and Rs 50,000 respectively.

| | | *(Rs)* |
|---|---|---|
| (4) | Profit and Loss at the end | 3,50,000 |
| | (–) Profit and Loss in the beginning | 2,00,000 |
| (5) | Net Profit during the year | 1,50,000 |
| | + Provision for tax during the year | 50,000 |
| | + Proposed dividend | 70,000 |
| | Net Profit before taxation & extraordinary Items | **2,70,000** |

### *Illustration 8*

From the following Balance Sheets of Xerox Ltd., prepare cash flow statement.

| *Particulars* | *Note No.* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | 15,00,000 | 10,00,000 |
| b) Reserve and surplus (Balance in Statement of Profit and Loss) | | 7,50,000 | 6,00,000 |
| 2. Non-current Liabilities | | | |
| Long-term borrowings | 1 | 1,00,000 | 2,00,000 |
| 3. Current Liabilities | | | |
| a) Trade payables | | 1,00,000 | 1,10,000 |
| b) Short-term provisions (Provision for taxation) | | 95,000 | 80,000 |
| **Total** | | **25,45,000** | **19,90,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | | | |
| (i) Tangible assets | 2 | 10,10,000 | 12,00,000 |
| (ii) Intangible assets (Goodwill) | | 1,80,000 | 2,00,000 |
| b) Non-current investment | | 6,00,000 | - |
| 2. Current assets | | | |
| a) Inventories | | 1,80,000 | 1,00,000 |
| b) Trade Receivables | | 2,00,000 | 1,50,000 |
| c) Cash and cash equivalents | 3 | 3,75,000 | 3,40,000 |
| **Total** | | **25,45,000** | **19,90,000** |

Notes to Accounts:

| *Particulars* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|
| 1. Long-term borrowings: | | |
| i) Debentures | — | 2,00,000 |
| ii) Bank loan | 1,00,000 | — |
| | **1,00,000** | **2,00,000** |
| 2. Tangible Assets | | |
| i) Land and building | 6,50,000 | 8,00,000 |
| ii) Plant and machinery | 3,60,000 | 4,00,000 |
| | **10,10,000** | **12,00,000** |
| 3. Cash and cash equivalents | | |
| i) Cash in hand | 70,000 | 50,000 |
| ii) Bank balance | 3,05,000 | 2,90,000 |
| | **3,75,000** | **3,40,000** |

Additional information:

1. Dividend proposed and paid during the year Rs 1,50,000.
2. Income tax paid during the year includes Rs 15,000 on account of dividend tax.
3. Land and building book value Rs 1,50,000 was sold at a profit of 10%.
4. The rate of depreciation on plant and machinery is 10%.

***Solution:***

**Cash Flow Statement**

| *Particulars* | *(Rs)* |
|---|---|
| **I. Cash flows from Operating Activities** | |
| Net Profit before Taxation and Extraordinary Items | 3,95,000 |
| Adjustment for – | |
| + Depreciation | 40,000 |
| + Goodwill written-off | 20,000 |
| – Profit on Sale of Land | (15,000) |
| = Operating Profit before working capital changes | 4,40,000 |
| – Decrease in Trade Payables | (10,000) |
| – Increase in Trade Receivables | (50,000) |
| – Increase in Inventories | (80,000) |
| = Cash generated from Operations | 3,00,000 |
| – Income Tax Paid (1) | (65,000) |
| A. Cash Inflows from Operations | **2,35,000** |
| **II. Cash flows from Investing Activities** | |
| Proceeds from Sale of Land and Building | 1,65,000 |
| Purchase of Investment | (6,00,000) |
| B. Cash used in Investing Activities | **(4,35,000)** |
| **III. Cash flows from Financing Activities** | |
| Proceeds from issue of Equity Share Capital | 5,00,000 |
| Redemption of Debentures | (2,00,000) |
| Proceeds from raising Bank Loan | 1,00,000 |
| Dividend Paid | (1,50,000) |
| Dividend Tax Paid | (15,000) |
| C. Cash flows from Financing Activities | **2,35,000** |
| Net Increase in cash and cash equivalents (A+B+C) | 35,000 |
| + Cash and Cash Equivalents in the beginning | 3,40,000 |
| Cash and Cash Equivalent at the end | **3,75,000** |

*Working Notes:*

| | | |
|---|---|---|
| (1) | Total tax paid during the year | Rs 80,0000 |
| (–) | Dividend tax paid (given) | Rs (15,000) |
| | Income tax paid for operating activities | **Rs 65,000** |

(2) Net profit earned during the year after tax and dividend
= Rs 7,50,000 – 6,00,000 = Rs 1,50,000

(3) Net profit before tax
= Net profit earned during the year after tax and dividend + Provision for tax made + Proposed Dividend
= Rs 1,50,000 + Rs 95,000 (See provision for taxation account)+ Rs 1,50,000
= Rs 3,95,000

### Equity Share Capital Account

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Balance c/d | | 15,00,000 | Balance b/d | | 10,00,000 |
| | | | Cash (New capital raised) | | 5,00,000 |
| | | **15,00,000** | | | **15,00,000** |

### Debenture Account

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Cash (Redemption) | | 20,000 | Balance b/d | | 20,000 |
| | | **20,000** | | | **20,000** |

### Bank Account

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Balance c/d | | 1,00,000 | Cash | | 1,00,000 |
| | | **1,00,000** | | | **1,00,000** |

### Provision for Taxation Account

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Cash (Tax paid:which includes Rs 15,000 as dividend | | 80,000 | Balance b/d | | 80,000 |
| Balance c/d | | 95,000 | Statement of Profit and Loss (Provision made during the year) | | 95,000 |
| | | **1,75,000** | | | **1,75,000** |

### Land and Building Account

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Balance b/d | | 8,00,000 | Cash | | 1,65,000 |
| Statement of Profit and Loss (Profit on sale) | | 15,000 | Balance c/d | | 6,50,000 |
| | | **8,15,000** | | | **8,15,000** |

**Proposed Dividend Account**

Dr. Cr.

| Particulars | J.F. | Amount (Rs) | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|
| Cash | | 1,50,000 | Surplus | | 1,50,000 |
| | | **1,50,000** | | | **1,50,000** |

**Plant and Machinery Account**

Dr. Cr.

| Particulars | J.F. | Amount (Rs) | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|
| Balance b/d | | 4,00,000 | Depreciation | | 40,000 |
| | | | Balance c/d | | 3,60,000 |
| | | **4,00,000** | | | **4,00,000** |

***Illustration 9***

From the following information of Oswal Mills Ltd., prepare cash flow statement:

**Balance Sheet of Oswal Mills**
**as on 31st March, 2016 and 2017**

(Rupees in Lakhs)

| Particulars | Note No. | 31stMarch 2017 (Rs) | 31st March 2016 (Rs) |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | 1 | 1,300 | 1,400 |
| b) Reserve and surplus (Surplus) | | 4,700 | 4,000 |
| 2. Current Liabilities | | | |
| a) Short-term borrowings | | 200 | 600 |
| b) Trade payables | | 500 | 400 |
| **Total** | | **6,700** | **6,400** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | 2 | 2,400 | 2.400 |
| b) Non-current investments | | 300 | 200 |
| 2. Current assets | | | |
| a) Inventories | | 1,200 | 1,300 |
| b) Trade receivables | | 800 | 900 |
| c) Cash and cash equivalents | | 1,200 | 800 |
| d) Short-term loans and advances | | 800 | 800 |
| **Total** | | **6,700** | **6,400** |

Notes to Accounts: (Rs in Lakhs)

| Particulars | 31st March 2017 (Rs) | 31st March 2016 (Rs) |
|---|---|---|
| 1. Share capital | | |
| Equity share capital | 1,000 | 1,000 |
| 10% preference share capital | 300 | 400 |
| | **1,300** | **1,400** |
| 2. Fixed assets | | |
| Tangible assets | 3,600 | 3,400 |
| Less: Accumlated depreciation | (1,200) | (1,000) |
| | **2,400** | **2,400** |

**Statement of Profit and Loss**
**for the year ended 31st March, 2017**

(Rupees in Lakhs)

| Particulars | Note No. | 31stMarch 2017 (Rs) | - |
|---|---|---|---|
| I. Revenue from operation | | 2,800 | - |
| II. Other income (dividend income) | | 1,000 | - |
| III. Total Revenue | | 3,800 | - |
| IV. Expenses | | | - |
| Cost of material consumed | | 400 | - |
| Employees benefit expenses | | 200 | - |
| Finance cost (interest paid) | | 200 | - |
| Depreciation | | 200 | - |
| Loss due to earthquake | | 1,100 | - |
| | | 2,100 | |
| V. Profit before tax | | 1,700 | - |
| VI. Tax paid | | 1,000 | - |
| Profit after tax | | 700 | - |

Additional information:
1. No dividend paid by the company during the current financial year.
2. Out of fixed assets, land worth Rs 1,000 Lakhs having no accumulated depreciation was sold at no profit or no loss.

***Solution:***

**Cash Flow Statement**

(Rupees in Lakhs)

| Particulars | Rs |
|---|---|
| **Cash Flows from Operating Activities** | |
| Net Profit before Tax and Extraordinary Items (1) | 2,800 |
| Adjustment for Non-cash and Non-operating Items | |
| + Interest paid | 200 |
| + Depreciation | 200 |
| Operating profit before working capital changes | 3,200 |
| Adjustment for : | |
| + Decrease in Inventories | 100 |
| + Decrease in Trade Receivables | 100 |

| | |
|---|---|
| + Increase in Trade Payables | 100 |
| Cash generated from operations | 3,500 |
| (–) Income Tax paid | (1,000) |
| Cash Flow before Extraordinary items | 2,500 |
| (–) Loss due to earthquake | (1,100) |
| A. Net cash from Operating Activities | 1,400 |
| **Cash flows from Investing Activities** | |
| Sale of Land | 1,000 |
| Purchase of fixed assets (2) | (1,200) |
| Purchase of Investments | (100) |
| B. Net cash from Investing Activities | (300) |
| **Cash flows from Financing Activities** | |
| Payment of short-term loans | (400) |
| Interest Paid | (200) |
| Redemption of 10% preference share capital | (100) |
| C. Net Cash used in Financing Activities | (700) |
| Net increase in Cash and Cash Equivalents during the year (A+B+C) | 400 |
| + Cash and Cash Equivalents in the beginning of the year | 800 |
| = Cash and Cash Equivalents in the end | **1,200** |

*Working Notes:*

(Rs in Lakhs)

(1) Net Profit before Tax and Extraordinary Items = Rs 700 + Rs 1,100 + Rs 1,000
= Rs 2,800

(2) **Fixed Assets Account**

*Dr.* *Cr.*

| *Particulars* | *J.F.* | *Amount (Rs)* | *Particulars* | *J.F.* | *Amount (Rs)* |
|---|---|---|---|---|---|
| Balance b/d | | 3,400 | Cash (Sale of land) | | 1,000 |
| Cash (Purchase of fixed assets) | | 1,200 | Balance c/d | | 3,600 |
| | | **4,600** | | | **4,600** |

**Accumulated Depreciation Account**

Dr. Cr.

| Particulars | J.F. | Amount (Rs) | Particulars | J.F. | Amount (Rs) |
|---|---|---|---|---|---|
| Balance c/d | | 1,200 | Balance b/d | | 1,000 |
| | | | Statement of Profit and Loss | | 200 |
| | | **1,200** | | | **1,200** |

***Illustration 10***

From the following information of Banjara Ltd., prepare a cash flow statement:

(Rupees in Lakhs)

| Particulars | Note No. | 31stMarch 2017 (Rs) | 31st March 2016 (Rs) |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | 1,500 | 1,250 |
| b) Reserve and surplus (surplus) | | 3,410 | 1,380 |
| 2. Non-current Liabilities | | | |
| Long-term borrowings (Long-term loan) | | 1,110 | 1,040 |
| 3. Current Liabilities | | | |
| a) Trade payables | | 150 | 1,890 |
| b) Other current liabilities | 1 | 630 | 1,100 |
| **Total** | | **6,800** | **6,660** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | 2 | 730 | 850 |
| b) Non-current investments | | 2,500 | 2,500 |
| 2. Current assets | | | |
| a) Current investments (Marketable) | | 670 | 135 |
| b) Inventories | | 900 | 1,950 |
| c) Trade Receivables | | 1,700 | 1,200 |
| d) Cash and cash equivalents | | 200 | 25 |
| e) Other current assets (Interest receivables) | | 100 | — |
| **Total** | | **6,800** | **6,660** |

Notes to Accounts:

| Particulars | 31st March 2017 (Rs) | 31st March 2016 (Rs) |
|---|---|---|
| 1. Other Current Liabilities | | |
| i) Interest payable | 230 | 100 |
| ii) Income tax payable | 400 | 1,000 |
| | **630** | **1,100** |

| | | |
|---|---|---|
| 2. Fixed Assets: | | |
| Tangible | 2,180 | 1,910 |
| Less: Accumlated depreciation | (1,450) | (1,060) |
| | **730** | **850** |

**Statement of Profit and Loss for the year ended 31 March, 2017**

(Rupees in Lakhs)

| *Particulars* | *Note No.* | *2017 March 31 (Rs)* |
|---|---|---|
| I. Revenue from operation | | 30,650 |
| II. Other income | 1 | 640 |
| III. Total Revenue | | **31,290** |
| IV. Expenses | | |
| Cost of material consumed | | 26,000 |
| Finance cost (interest expenses) | | 400 |
| Depreciation | | 450 |
| Other expenses (Admn. and selling expenses) | | 910 |
| **Total expenses** | | **27,760** |
| Profit before tax | | 3,530 |
| Less: Tax | | (300) |
| Profit after tax | | **3,230** |

Notes to Accounts:

| *Particulars* | *Rs* |
|---|---|
| 1. Other Income during the year 2016-17 | |
| i) Interest Income | 300 |
| ii) Dividend Income | 200 |
| iii) Insurance Proceeds from earthquake disaster Settlement | 140 |
| | **640** |

*Additional Information:*

(Rs ’000)

(i) An amount of Rs 250 was raised from the issue of share capital and a further Rs 250 was raised from long-term borrowings.

(ii) Interest expense was Rs 400 of which Rs 170 was paid during the period. Rs 100 relating to interest expense of the prior period was also paid during the period.

(iii) Dividends paid were Rs 1,200.

(iv) Tax deducted at source on dividends received (included in the tax expense of Rs 300 for the year) amounted to Rs 40.

(v) During the period, the enterprise acquired Fixed Assets for Rs 350. The payment was made in cash.

(vi) Plant with original cost of Rs 80 and accumulated depreciation of Rs 60 was sold for Rs 20.

(vii) Trade Receivables and Trade Payables include amounts relating to credit sales and credit purchases only.

**Cash Flow Statement**
**(Direct Method)**

*(Rs '000)*

| *Particulars* | *Rs,* | *Rs* |
|---|---|---|
| **Cash Flows from Operating Activities** | | |
| Cash Receipts from Customers | 30,150 | |
| Cash Paid to Suppliers and Employees | (27,600) | |
| Cash generated from Operations | 2,550 | |
| Income Tax paid | (860) | |
| Cash Flow before Extraordinary Item | 1,690 | |
| Proceeds from earthquake disaster settlement | 140 | |
| *Net Cash from Operating Activities* | | 1,830 |
| **Cash Flows from Investing Activities** | | |
| Purchase of Fixed Assets | (350) | |
| Proceeds from Sale of Equipment | 20 | |
| Interest Received | 200 | |
| Dividends Received | 160 | |
| *Net cash from Investing Activities* | | 30 |
| **Cash Flows from Financing Activities** | | |
| Proceeds from issuance of Share Capital | 250 | |
| Proceeds from Long-term Borrowings | 250 | |
| Repayment of Long-term Borrowings | (180) | |
| Interest paid | (270) | |
| Dividends paid | (1,200) | |
| *Net cash used in Financing Activities* | | (1,150) |
| **Net increase in Cash and Cash Equivalents** | | 710 |
| Cash and cash equivalents at beginning of period | | 160 |
| Cash and cash equivalents at end of period | | 870 |

**Cash Flow Statement**
**(Indirect Method)**

*(Rs '000)*

| *Particulars* | *Rs* |
|---|---|
| **Cash Flows from Operating Activities** | |
| Net Profit before Taxation and Extraordinary Item | 3,390 |
| Adjustments for: | |
| + Depreciation | 450 |
| – Interest Income | (300) |
| – Dividend Income | (200) |
| + Interest Expense | 400 |
| Operating Profit before working capital changes | 3,740 |
| Increase in Trade Receivables | (500) |
| Decrease in Inventories | 1,050 |
| Decrease in Trade Payables | (1,740) |
| Cash generated from Operations | 2,550 |
| Income Tax paid | (860) |
| Cash flow before Extraordinary Items | 1,690 |
| Proceeds from earthquake disaster settlement | 140 |
| *Net cash from Operating Activities* | **1,830** |
| **Cash Flows from Investing Activities** | |
| Purchase of Fixed Assets | (350) |
| Proceeds from Sale of Equipment | 20 |
| Interest Received | 200 |
| Dividends Received (net of TDS) | 160 |
| *Net cash from Investing Activities* | **30** |
| **Cash flows from Financing Activities** | |
| Proceeds from issuance of Share Capital | 250 |
| Proceeds from Long-term Borrowings | 250 |
| Repayment of Long-term Borrowings | (180) |
| Interest Paid | (270) |
| Dividends Paid | (1,200) |
| *Net Cash used in Financing Activities* | **(1,150)** |
| **Net Increase in Cash and Cash Equivalents** | 710 |
| Cash and Cash Equivalents at the beginning of the period | 160 |
| Cash and Cash Equivalents at the end of the period | **870** |

*Working Notes:*

(1) *Cash and Cash Equivalents*

Cash and Cash Equivalents consist of cash in hand and balances with banks, and investments in money-market instruments. Cash and Cash Equivalents included in the Cash Flow Statement comprise of the following balance sheet amounts.

*(Rs '000)*

| | 2017 (Rs) | 2016 (Rs) |
|---|---|---|
| Cash in Hand and balances with Bank | 200 | 25 |
| Short-term Investments | 670 | 135 |
| Cash and Cash Equivalents | 870 | 160 |

(2) *Cash Receipts from Customers*

| | |
|---|---|
| Sales | 30,650 |
| *Add:* Trade Receivables at the beginning of the year | 1,200 |
| | 31,850 |
| *Less :* Trade Receivables at the end of the year | (1,700) |
| | 30,150 |

(3) *Cash paid to Suppliers and Employees*

| | | |
|---|---|---|
| Cost of Revenue from operations | | 26,000 |
| Administrative and Selling Expenses | | 910 |
| | | 26,910 |
| *Add:* Trade Payables at the beginning of the year | 1,890 | |
| Inventories at the end of the year | 900 | 2,790 |
| | | 29,700 |
| *Less :* Trade Payables at the end of the year | 150 | |
| Inventories at the beginning of the year | 1,950 | (2,100) |
| | | 27,600 |

(4) *Income Tax paid (including TDS from dividends received)*

| | |
|---|---|
| Income Tax expense for the year (including tax deducted at source from dividends received) | 300 |
| *Add :* Income Tax liability at the beginning of the year | 1,000 |
| | 1,300 |
| *Less :* Income tax payable at the end of the year | (400) |
| | 900 |

Out of Rs 900, tax deducted at source on dividends received (amounting to Rs 40) is included in cash flows from investing activities and the balance of Rs 860 is included in cash flows from operating activities.

(5) *Repayment of Long-term Borrowings*

| | |
|---|---|
| Long-term Debts at the beginning of the year | 1,040 |
| *Add :* Long-term Borrowings made during the year | 250 |
| | 1,290 |
| *Less :* Long-term Borrowings at the end of the year | (1,110) |
| | 180 |

(6) *Interest paid*

| | |
|---|---|
| Interest expense for the year | 400 |
| *Add:* Interest Payable at the beginning of the year | 100 |
| | 500 |
| *Less:* Interest Payable at the end of the year | (230) |
| | 270 |

### *Terms Introduced in the Chapter*

1. Cash
2. Cash Equivalents
3. Cash Inflows
4. Cash Outflows
5. Non-cash item
6. Cash Flow Statement
7. Operating Activities
8. Investing Activities
9. Financing Activities
10. Accounting Standard-3
11. Extraordinary Items

### *Summary*

*Cash Flow Statement:* The Cash Flow Statement helps in ascertaining the liquidity of an enterprise. Cash Flow Statement is to be prepared and reported by Indian companies according to AS-3 issued by The Institute of Chartered Accountants of India. The cash flows are categorised into flows from operating, investing and financing activities. This statement helps the users to ascertain the amount and certainty of cash flows to be generated by company.

## *Questions for Practice*

### Short Answer Questions

1. What is a Cash flow statement?
2. How are the various activities classified (as per AS-3 revised) while preparing cash flow statement?
3. State the uses of cash flow statement.
4. What are the objectives of preparing cash flow statement?
5. State the meaning of the terms: (i) Cash Equivalents, (ii) Cash flows.
6. Prepare a format of cash flow from operating activities under indirect method.
7. State clearly what would constitute the operating activities for each of the following enterprises:
   - (i) Hotel
   - (ii) Film production house
   - (iii) Financial enterprise
   - (iv) Media enterprise
   - (v) Steel manufacturing unit
   - (vi) Software development business unit.
8. "The nature/type of enterprise can change altogether the category into which a particular activity may be classified." Do you agree? Illustrate your answer.

### Long Answer Questions

1. Describe the procedure to prepare Cash Flow Statement.
2. Describe "Indirect" method of ascertaining Cash Flow from operating activities.
3. Explain the major Cash Inflows and outflows from investing activities.
4. Explain the major Cash Inflows and outflows from financing activities.

### Numerical Questions

1. Anand Ltd., arrived at a net income of Rs 5,00,000 for the year ended March 31, 2017. Depreciation for the year was Rs 2,00,000. There was a profit of Rs 50,000 on assets sold which was transferred to Statement of Profit and Loss account. Trade Receivables increased during the year Rs 40,000 and Trade Payables also increased by Rs 60,000. Compute the cash flow from operating activities by the indirect approach.

   [**Ans.:** Rs 6,70,000]

2. From the information given below you are required to calculate the cash paid for the inventory:

| Particulars | (Rs) |
|---|---|
| Inventory in the beginning | 40,000 |
| Credit Purchases | 1,60,000 |
| Inventory in the end | 38,000 |
| Trade payables in the beginning | 14,000 |
| Trade payables in the end | 14,500 |

[**Ans.:** Rs 1,59,500]

3. For each of the following transactions, calculate the resulting cash flow and state the nature of cash flow, viz., operating, investing and financing.

   (a) Acquired machinery for Rs 2,50,000 paying 20% by cheque and executing a bond for the balance payable.

   (b) Paid Rs 2,50,000 to acquire shares in Informa Tech. and received a dividend of Rs 50,000 after acquisition.

   (c) Sold machinery of original cost Rs 2,00,000 with an accumulated depreciation of Rs 1,60,000 for Rs 60,000.

   [**Ans.:** (a) Rs (50,000) investing activity (outflow); (b) Rs (2,00,000) investing activity (outflow); (c) Rs 60,000 investing activity (inflow).

4. The following is the Profit and Loss Account of Yamuna Limited:

**Statement of Profit and Loss of Yamuna Ltd.,**
**for the Year ended March 31, 2017**

| *Particulars* | *Note No.* | *Amount (Rs)* |
|---|---|---|
| i) Revenue from Operations | | 10,00,000 |
| ii) Expenses | | |
| Cost of Materials Consumed | 1 | 50,000 |
| Purchases of Stock-in-trade | | 5,00,000 |
| Other Expenses | 2 | 3,00,000 |
| Total Expenses | | **8,50,000** |
| iii) Profit before tax (i-ii) | | 1,50,000 |

*Additional information:*

(i) Trade receivables decrease by Rs 30,000 during the year.
(ii) Prepaid expenses increase by Rs 5,000 during the year.
(iii) Trade payables increase by Rs 15,000 during the year.
(iv) Outstanding expenses payable increased by Rs 3,000 during the year.
(v) Other expenses included depreciation of Rs 25,000.

Compute net cash from operations for the year ended March 31, 2017 by the indirect method.

[**Ans.:** Cash from operations Rs 2,18,000].

5. Compute cash from operations from the following figures:

(i) Profit for the year 2016-17 is a sum of Rs 10,000 after providing for depreciation of Rs 2,000.

(ii) The current assets and current liabilities of the business for the year ended March 31, 2016 and 2015 are as follows:

| *Particulars* | *March 31, 2016 (Rs)* | *March 31, 2017 (Rs)* |
|---|---|---|
| Trade Receivables | 14,000 | 15,000 |
| Provision for Doubtful Debts | 1,000 | 1,200 |
| Trade Payables | 13,000 | 15,000 |
| Inventories | 5,000 | 8,000 |
| Other Current Assets | 10,000 | 12,000 |
| Expenses payable | 1,000 | 1,500 |
| Prepaid Expenses | 2,000 | 1,000 |
| Accrued Income | 3,000 | 4,000 |
| Income received in advance | 2,000 | 1,000 |

[**Ans.:** Cash from operations: Rs 7,700].

6. From the following particulars of Bharat Gas Limited, calculate Cash Flows from Investing Activities. Also show the workings clearly preparing the ledger accounts:

**Balance Sheet of Bharat Gas Ltd., as on 31 March, 2016 and 31 March 2017**

| *Particulars* | *Note No.* | *Figures as the end of 2017 (Rs)* | *Figures as at the end of reporting 2016 (Rs)* |
|---|---|---|---|
| II) Assets | | | |
| 1. Non-current Assets | | | |
| a) Fixed assets | | | |
| i) Tangible assets | 1 | 12,40,000 | 10,20,000 |
| ii) Intangible assets | 2 | 4,60,000 | 3,80,000 |
| b) Non-current investments | 3 | 3,60,000 | 2,60,000 |

Notes: 1 Tangible assets = Machinery
2 Intangible assets = Patents

Notes to accounts:

| | Figures of current year | Figures of previous year |
|---|---|---|
| 1. Tangible Assets | | |
| Machinery | **12,40,000** | **10,20,000** |
| 2. Intangible Assets | | |
| Goodwill | 3,00,000 | 1,00,000 |
| Patents | 1,60,000 | 2,80,000 |
| | **4,60,000** | **3,80,000** |

| | | |
|---|---|---|
| 3. Non-current Investments | | |
| 10% long term investments | 1,60,000 | 60,000 |
| Investment in land | 1,00,000 | 1,00,000 |
| Shares of Amartex Ltd. | 1,00,000 | 1,00,000 |
| | **3,60,000** | **2,60,000** |

*Additional Information:*

(a) Patents were written-off to the extent of Rs 40,000 and some Patents were sold at a profit of Rs 20,000.

(b) A Machine costing Rs 1,40,000 (Depreciation provided thereon Rs 60,000) was sold for Rs 50,000. Depreciation charged during the year was Rs 1,40,000.

(c) On March 31, 2016, 10% Investments were purchased for Rs 1,80,000 and some Investments were sold at a profit of Rs 20,000. Interest on Investment was received on March 31, 2017.

(d) Amartax Ltd., paid Dividend @ 10% on its shares.

(e) A plot of Land had been purchased for investment purposes and let out for commercial use and rent received Rs 30,000.

[**Ans.:** Rs 5,24,000].

7. From the following Balance Sheet of Mohan Ltd., prepare cash flow Statement:

**Balance Sheet of Mohan Ltd.,**
**as at 31st March 2016 and 31st March 2017**

| *Particulars* | *Note No.* | *March 31, 2017 (Rs)* | *March 31, 2016 (Rs)* |
|---|---|---|---|
| **I) Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Equity share capital | | 3,00,000 | 2,00,000 |
| b) Reserves and surplus | | 2,00,000 | 1,60,000 |
| 2. Non-current liabilities | | | |
| a) Long-term borrowings | 1 | 80,000 | 1,00,000 |
| 3. Current liabilities | | | |
| Trade payables | | 1,20,000 | 1,40,000 |
| Short-term provisions | 2 | 70,000 | 60,000 |
| **Total** | | **7,70,000** | **6,60,000** |
| **II) Assets** | | | |
| 1. Non-current assets | | | |
| Fixed assets | 3 | 5,00,000 | 3,20,000 |
| 2. Current assets | | | |
| a) Inventories | | 1,50,000 | 1,30,000 |
| b) Trade receivables | 4 | 90,000 | 1,20,000 |
| c) Cash and cash equivalents | 5 | 30,000 | 90,000 |
| **Total** | | **7,70,000** | **6,60,000** |

Notes to accounts:

| | | 2017 | 2016 |
|---|---|---|---|
| 1. | Long-term borrowings | | |
| | Bank Loan | **80,000** | **1,00,000** |
| 2. | Short-term provision | | |
| | Proposed dividend | **70,000** | **60,000** |
| 3. | Fixed assets | 6,00,000 | 4,00,000 |
| | Less: Accumulated Depreciation | 1,00,000 | 80,000 |
| | (Net) Fixed Assets | **5,00,000** | **3,20,000** |
| 4. | Trade receivables | | |
| | Debtors | 60,000 | 1,00,000 |
| | Bills receivables | 30,000 | 20,000 |
| | | **90,000** | **1,20,000** |
| 5. | Cash and cash equivalents | | |
| | Bank | **30,000** | **90,000** |

*Additional Information:*

Machine Costing Rs 80,000 on which accumulated depreciation was Rs, 50,000 was sold for Rs 20,000.

| | | Rs |
|---|---|---|
| [**Ans.:** | Cash flow from Operating Activities | 1,80,000 |
| | Cash flow from Investing Activities | (2,60,000) |
| | Cash flow from Financing Activities | 20,000. |

8. From the following Balance Sheets of Tiger Super Steel Ltd., prepare Cash Flow Statement:

**Balance Sheet of Tiger Super Steel Ltd.**
**as at 31st March 2014 and 31st March 2017**

| *Particulars* | *Note No.* | *March 31, 2017 (Rs)* | *March 31, 2016 (Rs)* |
|---|---|---|---|
| **I) Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | 1 | 1,40,000 | 1,20,000 |
| b) Reserves and surplus | 2 | 22,800 | 15,200 |
| 2. Current Liabilities | | | |
| a) Trade payables | 3 | 21,200 | 14,000 |
| b) Other current liabilities | 4 | 2,400 | 3,200 |
| c) Short-term provisions | 5 | 28,400 | 22,400 |
| | | **2,14,800** | **1,74,800** |
| **II) Assets** | | | |
| 1. Non-Current Assets | | | |
| a) Fixed assets | | | |
| i) Tangible assets | 6 | 96,400 | 76,000 |
| ii) Intangible assets | | 18,800 | 24,000 |
| b) Non-current investments | | 14,000 | 4,000 |
| 2. Current Assets | | | |
| a) Inventories | | 31,200 | 34,000 |
| b) Trade receivables | | 43,200 | 30,000 |
| c) Cash and Cash Equivalents | | 11,200 | 6,800 |
| | | **2,14,800** | **1,74,800** |

Notes to accounts:

| | 2017 | 2016 |
|---|---|---|
| 1. Share Capital | | |
| Equity share capital | 1,20,000 | 80,000 |
| 10% Preference share capital | 20,000 | 40,000 |
| | **1,40,000** | **1,20,000** |
| 2. Reserves and surplus | | |
| General reserve | 12,000 | 8,000 |
| Balance in statement of profit and loss | 10,800 | 7,200 |
| | **22,800** | **15,200** |
| 3. Trade payables | | |
| Bills payable | 21,200 | 14,000 |
| 4. Other current liabilities | | |
| Outstanding expenses | **2,400** | **3,200** |
| 5. Short-term provisions | | |
| Provision for taxation | 12,800 | 11,200 |
| Proposed dividend | 15,600 | 11,200 |
| | **28,400** | **22,400** |
| 6. Tangible assets | | |
| Land and building | 20,000 | 40,000 |
| Plant | 76,400 | 36,000 |
| | **96,400** | **76,000** |

*Additional Information:*

Depreciation Charge on Land & Building Rs 20,000, and Plant Rs 10,000 during the year.

[**Ans.:** Cash flow from Operating Activities Rs 56,000
Cash flow from Investing Activities Rs (60,400)
Cash flow from Financing Activities Rs 8,800].

9. From the following information, prepare cash flow statement:

| *Particulars* | *Note No.* | *31st March 2015 (Rs)* | *31st March 2014 (Rs)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | 7,00,000 | 5,00,000 |
| b) Reserve and surplus | | 4,70,000 | 2,50,000 |
| 2. Non-current Liabilities (8% Debentures) | | 4,00,000 | 6,00,000 |
| 3. Current Liabilities | | | |
| Trade payables | | 9,00,000 | 6,00,000 |
| **Total** | | **24,70,000** | **19,50,000** |

| | | | |
|---|---|---|---|
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| Fixed assets | | | |
| i) Tangible | | 7,00,000 | 5,00,000 |
| ii) Intangible–Goodwill | | 1,70,000 | 2,50,000 |
| 2. Current assets | | | |
| a) Inventories | | 6,00,000 | 5,00,000 |
| b) Trade Receivables | | 6,00,000 | 4,00,000 |
| c) Cash and cash equivalents | | 4,00,000 | 3,00,000 |
| **Total** | | **24,70,000** | **19,50,000** |

*Additional Information:*

Depreciation Charge on Plant amount to Rs 80,000.

| | | Rs |
|---|---|---|
| [**Ans.:** | Cash inflow from Operating Activities | 4,28,000 |
| | Cash inflow from Investing Activities | (2,80,000) |
| | Cash inflow from Financing Activities | (48,000). |

10. From the following Balance Sheet of Yogeta Ltd., prepare cash flow statement:

| *Particulars* | *Note No.* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | 1 | 4,00,000 | 2,00,000 |
| b) Reserve and surplus (Surplus) | | 2,00,000 | 1,00,000 |
| 2. Non-current Liabilities | | | |
| Long-term borrowings | 2 | 1,50,000 | 2,20,000 |
| 3. Current Liabilities | | | |
| a) Short-term borrowings (Bank overdraft) | | 1,00,000 | — |
| b) Trade payables | | 70,000 | 50,000 |
| c) Short-term provision (Provision for taxation) | | 50,000 | 30,000 |
| **Total** | | **9,70,000** | **6,00,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| Fixed assets | | | |
| Tangible | | 7,00,000 | 4,00,000 |
| 2. Current assets | | | |
| a) Inventories | | 1,70,000 | 1,00,000 |
| b) Trade Receivables | | 1,00,000 | 50,000 |
| c) Cash and cash equivalents | | — | 50,000 |
| **Total** | | **9,70,000** | **6,00,000** |

Notes to Accounts:

| Particulars | 31st March 2017 (Rs) | 31st March 2016 (Rs) |
|---|---|---|
| 1. Share capital | | |
| a) Equity share capital | 3,00,000 | 2,00,000 |
| b) Preference share capital | 1,00,000 | — |
| | **4,00,000** | **2,00,000** |
| 2. Long-term borrowings | | |
| Long-term loan | — | 2,00,000 |
| Loan from Rahul | 1,50,000 | 20,000 |
| | **1,50,000** | **2,20,000** |

*Additional Information:*

Net Profit for the year after charging Rs 50,000 as Depreciation was Rs 1,50,000. Dividend paid on Share was Rs 50,000, Tax Provision created during the year amounted to Rs 60,000.

| | | Rs |
|---|---|---|
| [**Ans.:** | Cash from Operating Activities | 1,20,000 |
| | Cash from Investing Activities | (3,50,000) |
| | Cash from Financing Activities | 80,000 |

11. Following is the Financial Statement of Garima Ltd., prepare cash flow statement.

| *Particulars* | *Note No.* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | 1 | 4,40,000 | 2,80,000 |
| b) Reserve and surplus (Surplus) | 2 | 40,000 | 28,000 |
| 2. Current Liabilities | | | |
| a) Trade payables | | 1,56,000 | 56,000 |
| b) Short-term provisions (Provision for taxation) | | 12,000 | 4,000 |
| **Total** | | **6,48,000** | **3,68,000** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| Fixed assets | | | |
| Tangible | | 3,64,000 | 2,00,000 |
| 2. Current assets | | | |
| a) Inventories | | 1,60,000 | 60,000 |
| b) Trade receivables | | 80,000 | 20,000 |
| c) Cash and cash equivalents | | 28,000 | 80,000 |
| d) Other current assets | | 16,000 | 8,000 |
| **Total** | | **6,48,000** | **3.68,000** |

*Notes to Accounts:*

| *Particulars* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|
| 1. Share capital | | |
| a) Equity share capital | 3,00,000 | 2,00,000 |
| b) Preference share capital | 1,40,000 | 80,000 |
| | **4,40,000** | **2,80,000** |
| 2. Reserve and surplus | | |
| Surplus in statement of profit and loss at the beginning of the year | 28,000 | |
| Add: Profit of the year | 16,000 | |
| Less: Dividend | 4,000 | |
| Profit at the end of the year | **40,000** | |

*Additional Information:*

1. Interest paid on Debenture Rs 600
2. Dividend paid during the year Rs 4,000
3. Depreciation charged during the year Rs 32,000

| | Rs |
|---|---|
| [**Ans.:** Cash flow from Operating Activities | (11,400) |
| Cash flow from Investing Activities | (1,96,000) |
| Cash flow from Financing Activities | 1,55,400. |

12. From the following Balance Sheet of Computer India Ltd., prepare cash flow statement.

*(Rs in '000)*

| *Particulars* | *Note No.* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|---|
| **I. Equity and Liabilities** | | | |
| 1. Shareholders' Funds | | | |
| a) Share capital | | 50,000 | 40,000 |
| b) Reserve and surplus–Surplus | 1 | 3,700 | 3,000 |
| 2. Non-Current Liabilities | | | |
| 10% Debentures | | 6,500 | 6,000 |
| 3. Current liabilities | | | |
| a) Short-term borrowings | 2 | 6,800 | 12,500 |
| b) Trade payables | | 11,000 | 12,000 |
| c) Short-term provisions | 3 | 10,000 | 8,000 |
| **Total** | | **88,000** | **81,500** |
| **II. Assets** | | | |
| 1. Non-current assets | | | |
| a) Fixed assets | 4 | 25,000 | 30,000 |
| 2. Current assets | | | |
| a) Inventories | | 35,000 | 30,000 |
| b) Trade receivables | | 24,000 | 20,000 |
| c) Cash and cash equivalents–cash | | 3,500 | 1,200 |
| d) Other current assets–prepaid exp. | | 500 | 300 |
| **Total** | | **88,000** | **81,500** |

Notes to Accounts:

| *Particulars* | *31st March 2017 (Rs)* | *31st March 2016 (Rs)* |
|---|---|---|
| 1. Reserve and surplus | | |
| i) Balance in statement of profit and loss | 1,200 | 1,000 |
| ii) General reserve | 2,500 | 2,000 |
| | **3,700** | **3,000** |
| 2. Short-term borrowings | | |
| Bank overdraft | 6,800 | 12,500 |
| 3. Short-term provisions | | |
| i) Provision for taxation | 4,200 | 3,000 |
| ii) Proposed dividend | 5,800 | 5,000 |
| | **10,000** | **8,000** |
| 4. Fixed Assets: | | |
| Fixed Assets | 40,000 | 41,000 |
| Less Accumulated Depreciation | (15,000) | (11,000) |
| | **25,000** | **30,000** |

*Additional Information:*

Interest paid on Debenture Rs 600

[**Ans.:** Net Cash from Operating Activities Rs 2,100
Net Cash from Investing Activities Rs 1,000
Net Cash from Financing Activities Rs 4,900

## *Project Work*

1. Read and analyse the cash flow statements as given in the Annual Report of any three listed companies and ascertain:
   (i) which method (direct or indirect) is used for the purpose of calculating cash flows from operating activities;
   (ii) the treatment of special items such as dividend tax, profit/loss on sale of fixed assets, depreciation extraordinary items, etc.
   (iii) Whether all companies follow the same proforma of cash flow statement or different ones.
   (iv) As to whether you think that companies properly highlight cash flow statement in their Annual Reports.
2. "Why companies must necessarily prepare and present a statement of cash flows". Discuss it in the classroom. Comment.
3. You analyse the cash flow statement for the past 3 years for a company chosen by you and find out-
   (i) Whether the net increase in cash and cash equivalents over the years is noticed.
   (ii) If net cash flow from operating activities have been negative throughout, what may be the possible reasons for the situation. What would be the possible reasons for your perception about the functioning of the company?

## Answers to Test your Understanding

**Test your Understanding – I**

**Answer :** a) Operating activities - 3, 6, 7, 10, 13, 15, 19, 20, 23, 24, 27;
b) Investing activities - 1, 5, 8, 11, 12, 16, 17, 21, 22
c) Financing activities - 2, 4, 9, 14, 18, 25, 26, 28, 29;
d) Cash equivalents - 30, 31, 32, 33.

**Test your Understanding – II**

**Answers:** (a) 40,000, (b) 60,000, (c) deducted from,

(d) deducted from, (e) added to, (f) added to

**Answers:** 1. +, 2. NC, 3. +, 4. –, 5. +, 6. NC, 7. –, 8 +, 9. NC, 10 –, 11 –, 12 +

**NOTE**

**NOTE**

# ACCOUNTANCY

## Computerised Accounting System

*Textbook for Class XII*

Government of Kerala
DEPARTMENT OF EDUCATION

State Council of Educational Research and Training (SCERT) Kerala
2018

## THE NATIONAL ANTHEM

Jana-gana-mana adhinayaka, jaya he
Bharatha-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchala-Jaladhi-taranga
Tava subha name jage,
Tava subha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharatha-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

## PLEDGE

India is my country. All Indians are my brothers and sisters.

I love my country and I am proud of its rich and varied heritage. I shall always strive to be worthy of it.

I shall give my parents, teachers and all elders respect and treat everyone with courtesy.

To my country and my people, I pledge my devotion. In their well-being and prosperity alone lies my happiness.

*Prepared by* :

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## *FOREWORD*

Dear Learners

The State Council of Educational Research and Training (SCERT Kerala) is extremely delighted to bring out a textbook for Computerised Accounting System based on Free and Open Source Software (FOSS) package for the Higher Secondary Second Year learners of Commerce Stream.

Equipping learners with the skills that are required in the digital age we live in, was sensed well in advance and sufficient input was made in the higher secondary curriculum. Hence use of Free and Open Source Software provides freedom to the users for accessing, modifying and redistributing the software.

As accounting is taught in the higher secondary level as a life skill subject which is also a basic and important business discipline, Computerised Accounting is introduced as a part of accountancy. It prepares the learners to analyse and evaluate the accounting procedures used in practice. It provides opportunities to learn accounting through the software - GNUKhata, Spreadsheet and Database applications based on LibreOffice software package. Hands-on activities and assessment slots are provided wherever needed to help the learners to actively look for the solutions in a co-operative and collaborative classroom, access information from various sources, analyse these information and make interpretations.

The SCERT is grateful to the team of practising teachers and experts who have contributed in the preparation of this textbook. We welcome creative and constructive suggestions and feedback about this book for improving the quality of the content and design of the textbook.

Wish you all success.

**Dr. J. Prasad**
Director
SCERT, Kerala

Downloaded from https:// www.studiestoday.com

Unit 1

# Overview of Computerised Accounting System

## Key Concepts

1.1 Computerised Accounting System (CAS)
1.2 Components of Computerised Accounting System.
1.3 Data and Information
1.4 Accounting cycle
1.5 Grouping of accounts
1.6 Security Features of CAS
1.7 Merits and Demerits of CAS
1.8 Accounting Information System

## Introduction

The advancement of Information Technology has brought enormous possibilities in the field of accounting. Usage of computers and accounting software packages help business men to carry out accounting process quickly and accurately. We have already learnt about the Manual Accounting System under which transactions are physically entered in the books of accounts. Computerised Accounting System processes voluminous data and variety of transactions with the help of computers. Both manual and computerised accounting system follow same principles and concepts of accounting.

## 1.1 Computerised Accounting System (CAS)

The computerised accounting system facilitates timely production of management information reports, which will help management to monitor and control the business effectively. Computerised accounting makes use of computers and accounting software packages to record, store and analyse financial data. The need for this system arises from advantages of speed and accuracy in recording and retrieval of data and lower cost of handling business transactions.

*A computerised accounting system is a system used by businesses for recording and manipulating financial data with the help of computers and various accounting software.*

Today, accounting software packages are in abundance to help us to process accounting data and come up with reports instantly.

### Features of CAS

Computer assisted accounting programmes have been widely used in the field of accounting.

- Can you imagine the purpose of using computer in accounting system?

Let us see this by narrating the features of CAS

**1. Simple and Integrated**

Computerised accounting system is integrated to provide accurate and up-to-date business information instantly. It is designed to automate and integrate all the business operations such as sales, finance, purchase, inventory and manufactoring.

**2. Transparency and Control**

Computerised accounting system provides sufficient time to plan, increases data accessibility and provides user satisfaction. It provides greater transparency for day- to-day business operations.

**3. Accuracy and Speed**

The accuracy of computer is very high. Each and every calculation is performed with same accuracy. Computer can also process data millions of times faster than human beings.

**4. Scalability**

The requirement of additional manpower is confined only to data entry operators and it costs almost nothing for processing additional transaction. Hence the cost of processing additional transactions is almost negligible.

**5. Reliability**

Since computer system is well adapted to performing repetitive operations, the generated financial information is more accurate and reliable in comparison with manual accounting systems.

## 1.2 Components of Computerised Accounting System

Computerised accounting system has five components, namely procedure, data, people, hardware and software. They are regarded as five pillars of computerised accounting system (Figure 1.1).

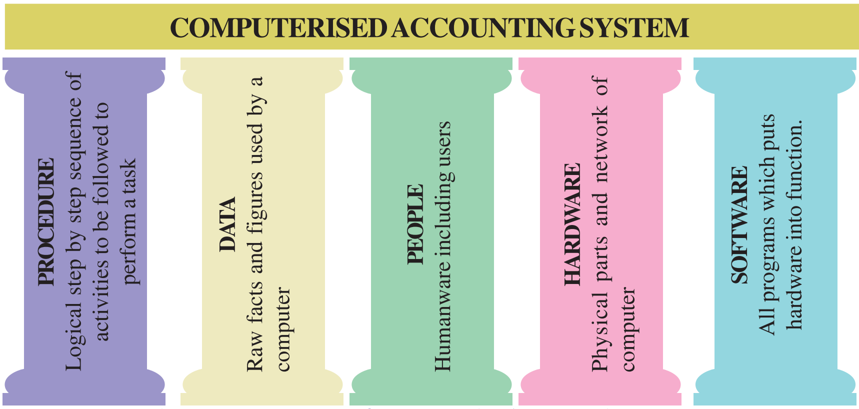



Fig 1.1 Components of Computerised Accounting System

## 1.3 Data and Information

See figure 1.2 and try to understand how data is transformed into information.


Fig 1.2 Conversion of Data into Information

In accounting, data comprises of one or more elements / items relating to a transaction. A data item or data element means the smallest unit or segment of data. When data is processed, it becomes information. Computerised accounting system is based on the concept of database wherein data is stored and processed with the help of software. The user can take various accounting reports such as Income Statement, Balance Sheet etc. Thus CAS converts the data into information.

Let's make this clear with the help of an example.

Think of a data that is created when the business makes a credit sale. This include

- Name of Account (Debtor)
- Account code (1.3.7)
- Date of transaction (1st June 2017)
- Amount (₹25,000)

This data needs processing at the point of sale inorder to issue a valid receipt (information). The data would be useful to the Sales Manager for preparing reports showing the total sales (information) during a particular period of time.

### *Let's assess*

1. *Describe how computerised accounting helps in keeping of systematic records in a business organisation.*
2. *Which among the following is not a component of CAS?*
   *a. data b. Software c. Procedure d. Decisions*
3. *Distinguish between Data and Information with an example.*
4. *Describe the features of computerised Accounting System.*

## 1.4 Accounting Cycle

The term accounting cycle refers to the specific steps that are involved in the completion of accounting process. We have learnt about different stages of accounting process in Plus One classes. The different stages of accounting cycle starts with recording of business transactions and ends with the preparation of financial statements which is given as follows:

1. Recording of transactions in journal
2. Posting of journal entries to ledger accounts
3. Preparation of Trial Balance from balance of accounts
4. Passing adjusting entries
5. Preparation of adjusted Trial Balance
6. Passing closing entries
7. Preparation of Financial Statements

In computerised accounting, the various stages of accounting cycle mentioned above are carried out with the help of computers.

## 1.5 Grouping of Accounts

In business, large number of transactions with varying nature is to be stored, processed and retrieved. Therefore it becomes necessary to have proper classification of data. Grouping of accounts in computerised accounting is based on accounting equation. We know that accounts are classified into assets, liabilities, income, expense and capital.

You can recollect that the accounting equation can be expressed as;

Assets = Equities (A = E)

Where

Equities = Liabilities + Capital (E = L + C)

Thus

Assets = Liabilities + Capital (A = L + C)

The amount of capital may be increased by profits or decreased by losses.

Thus the basic accounting equation can be re-written as;

**Assets = Liabilities + Capital + (Revenues – Expenses)**

*Revenue means inflow of resources, which results from the sale of goods or services in the normal course of business and increase in capital. Expenses imply consumption of resources in generating revenues and results in reduction of capital.*

We can divide and group each component of the above equation as follows:

1. **Assets**
   - Fixed Assets
     - Land
     - Buildings

- Plant and Machinery
- Furniture and Fixtures
- Current Assets
  - Cash
  - Bank
  - Debtors
  - Inventories

2. **Liabilities**
   - Secured loans
   - Unsecured loans
   - Creditors
   - Provisions
3. **Capital**
   - Share capital
   - Reserve and Surplus
     - Capital reserve
     - General reserve
     - Balance of Profit and Loss account
4. **Revenues**
   - Sales
   - Other Income
5. **Expenses**
   - Material consumed
   - Salary and wages
   - Manufacturing expenses
   - Administrative expenses

### 1.5.1 Codification of accounts

Systematic grouping is a pre-condition for proper codification, since each ledger under a group will have similar coding pattern.There is a hierarchical relationship between the groups and its components.Codification will help to ensure neatness of classification.

The term 'code' literally means a system of letter of figure with arbitrary meaning for brevity and for machine processing of information. It is an identification mark. Codification refers to allotting code numbers to accounts in a hierarchical structure. The codes are classified into each section and grouping of accounts can be done effectively. The grouping and codification depend upon the type of organisation and the extent of subdivision required for reporting on the basis of profit centres or product lines.

Codification is the essence of computerised accounting system. Here codes are necessary because the computer cannot understand that whether the item is an expense, income, asset or liability. When it is coded, computer can easily identify them.

**Methods of codification**

The coding scheme of account-heads should be such that it leads to grouping of accounts at various levels so as to generate Balance Sheet and Profit and Loss Account. The codes so used shall be simple, understandable, concise and expandable. For example, we may allot numeric codes for the major account groups, their sub groups, next level sub groups and so on.

**1 Assets**

- 1.1 Fixed Assets
  - 1.1.1 Land
  - 1.1.3 Building
  - 1.1.5 Plant and Machinery
  - 1.1.7 Equipments
  - 1.1.9 Furniture and fittings
- 1.3 Current Assets
  - 1.3.1 Cash
  - 1.3.3 Bank
  - 1.3.5 Bills Receivable
  - 1.3.7 Debtors
  - 1.3.9 Stock in hand

**2 Liabilities**

- 2.1 Long term liabilities
- 2.3 Current Liabilities

**3. Capital**

- 3.1 Share capital
- 3.3 Reserve and Surplus
  - 3.3.1 Capital reserve
  - 3.3.3 General reserve

**4. Revenues**

- 4.1 Direct Income
  - 4.1.1 Sales
- 4.3 Indirect income
  - 4.3.1 Rent received
  - 4.3.3 Commission received

**5 Expenses**

- 5.1 Capital expenditure
- 5.3 Revenue expenditure
  - 5.3.1 Direct expenses
    - 5.3.1.1 Wages
    - 5.3.1.2 Carriage inwards
  - 5.3.3 Indirect expenses
    - 5.3.3.1 Salary
    - 5.3.3.2 Rent

- The codification given above is not rigid. The code numbers of sub groups are not given consecutively (See the above example) so as to provide flexibility. ie.,we can add new sub groups in future, if necessaary.

## Types of codes

Codes can be classified in the following manner.

1. Sequential codes
2. Block codes
3. Mnemonic codes

### 1. Sequential codes

In sequential code, numbers and/or letters are assigned in consecutive order. They are applied primarily to source documents such as cheques, invoices etc.

For example:

CM001 – Excel Company Limited
CM002 – Premium Company Limited
CM003 – Modern Company Limited

This method of codification is simple, easy and concise. Here it is easy to identify the missing codes if any.

### 2. Block codes

In block code, a range of numbers is partitioned into a desired number of sub ranges and each sub range is allotted to a specific group.

For example

1001 – 1999 Televisions
2001 – 2999 Mobile phones
3001 – 3999 Refrigerators

Sub blocks can also be allotted inside a range of number. For example, in case of 1001 – 1999 Televisions, mentioned above the codes can be alloted in the following manner.

1001 – 1099 LED Televisions
1100 – 1199 LCD Televisions
1200 – 1299 Plasma Televisions

### 3. Mnemonic codes

It consists of alphabets or abbreviations as symbols to codify a piece of information. For example,Railway station codes – PGT for Palakkad, TVC for Trivandrum, TCR for Thrissur, etc.

Similarly, in accounting Codes may be assigned for day books as;

| | |
|---|---|
| SJ | Sales Journal |
| PJ | Purchase Journal |
| CB | Cash book |
| JP | Journal Proper |
| SRJ | Sales Return Journal |
| PRJ | Purchase Return Journal |

We can conclude here that it is convenient to code account heads, departments, places or locations. It is simple, meaningful and easy to remember but when size is increasing, grouping will become difficult.

### 1.5.2 Methodology to develop coding structure and coding

The coding system should be pre-planned by considering the scope and features of the piece of information. The codes should be designed to accommodate future additions. The hierarchy of data names should be strictly observed while developing codes.

The methodology can be explained with an example of assigning register number to a student. Register numbers are the individual codes allotted to students. Here the hierarchy of the schooling system should be identified first. The other relevant facts associated with the identification of a student are also taken.

The hierarchy may be decided as follows.

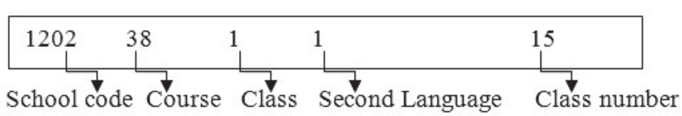
School $\rightarrow$ Course $\rightarrow$ Class $\rightarrow$ Second Language $\rightarrow$ Class number of Student.

Coding structure will be as follows.

- School – 4 digits
- Course – 2 digits
- Class – 1 digits
- Second Language – 1 digit
- Class number of student – 2 digit

Thus, every student will get a 10 digit code which helps to get the following details of a student from the code itself (eg. the school in which he/she is studying, the course for which he/she is studying, the second language of the student, the class number of the student etc).

Once the coding structure is decided, allotment of codes becomes easy. For example, the code number of a student with class number '15', with second language 'Malayalam' in class 'XI' 'Commerce' stream of School Code '1202' will be '1202381115'. Its coding is shown as follows;



**Let's assess**

1. *Range of numbers are used for codification in ..................*
   *(Block codes, Mnemonic codes, Sequential codes, All of these)*
2. *Grouping of accounts should be done basically by considering ..........*
   *(The rules of debit and credit, Accounting equation, Capital investment, Method of codification)*
3. *Codification of accounts is required for the purpose of ..........*
   *(a) Hierarchical relationship between groups and components.*
   *(b) Faster data processing .*
   *(c) Keeping data secured.*
   *(d) Easy preparation of final accounts.*
4. *Explain various types of codes with suitable examples.*

## 1.6 Security features of CAS

Imagine the security features you have installed or made use of in your mobile phone;

- Pattern locking
- Biometric finger print scanning
- PIN

Why do you use such security features in your phone?

Ensuring data security, preventing unauthorised access etc. will be your answer. Think in terms of the level of security features an organisation must use to safeguard its accounting data when compared to a mobile phone.

It is necessary that all accounting information must be kept safe and secure for all the time. Any unauthorised access to this information may have adverse effects. Possibility of theft, deletion, and alteration in accounting data will affect its reliability and accuracy.

All accounting software must ensure data security, safety and confidentiality. Therefore, the software usually provides the following.

(a) Password security
(b) Data audit
(c) Data vault

### Password security

Password is a mechanism which restricts the access to the computer system and data to the user only. The system facilitates defining the user rights according to organisation policy. By setting passwords, a person in an organisation may be given access to a particular set of data, while he may be denied access to another set of data.Password is the key or code to allow the access to the system.

### Data Audit

This feature enables us to know as to who and what changes have been made in the original data. This facility helps to fix responsibility to the person who has manipulated the data and thereby answers data integrity. In most software this is a separate menu available to the administrator to track unauthorised changes that have taken place in the data following his previous review.

### Data vault

Accounting software provides additional security through data vault. Vaulting will save data in encrypted form to ensure its security. Encryption essentially scrambles the information so as to make its interpretation extremely difficult or impossible.

Encryption ensures security of data even if it lands in wrong hands, because the receiver of data will not be able to decode and interpret it.

## 1.7 Merits and Demerits of CAS

The merits of CAS include ;

1. Timely generation of desired reports.
2. Efficiency in record keeping
3. Saves time and money
4. Confidentiality of data is maintained
5. Automated document preparation
6. Transparency and reliability
7. Accurate and updated information

The demerits of CAS include ;

1. Danger of hawkers and stealing of data
2. Problems with technology
3. Non-availability of skilled personnel
4. Chances of data loss due to various reasons
5. Faster obsolescence of technology which leads to scrapping of heavy investment
6. Huge training cost of employees
7. Unprogrammed and unspecified reports that cannot be generated from the system.

**Let's assess**

1. *Develop a coding structure suitable to assets with its different sub groups.*
2. *Explain the methodology to develop coding.*
3. *Mention the internal controlling methods in CAS.*

## 1.8 Accounting information system (AIS)

Accounting Information System (AIS) and its various sub-systems may be implemented through computerised accounting system. Accounting is a huge information system for any organisation. CAS integrates the entire sub systems of the organisation and provides a sound accounting information system. The major sub-systems are depicted in figure 1.4.

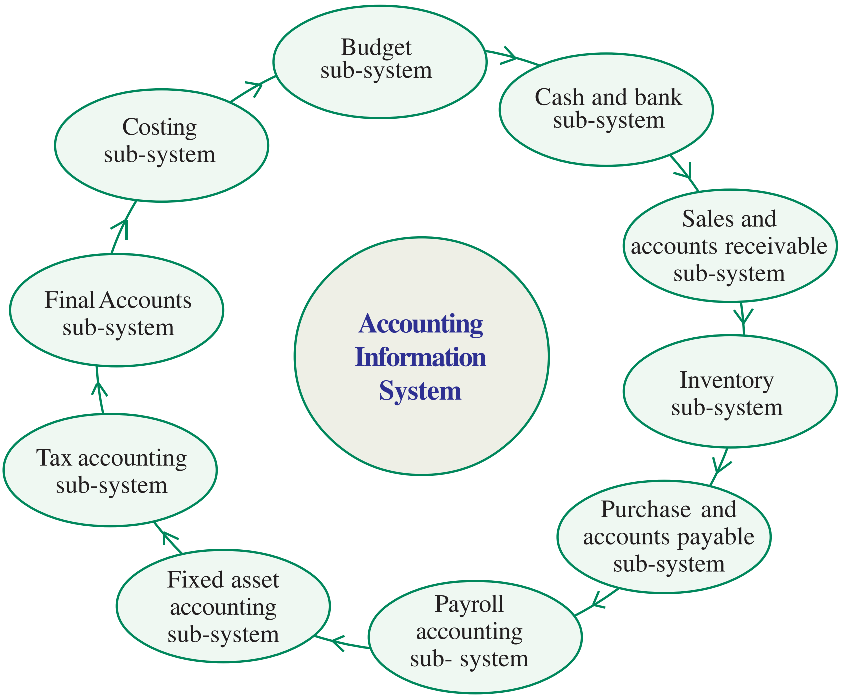



Fig 1.4 sub-systems of AIS

The sub systems of AIS are briefly explained below.

**Cash and Bank Sub-system**

It deals with the receipts and payments of cash (both physical and electronic). It includes electronic fund transfer, digital cash dealing etc.

**Sales and Accounts Receivable Sub-system**

It deals with recording of sales, maintaining of sales ledger and managing receivables. It generates periodic reports about sales, collections made, overdue accounts and receivables position.

**Inventory Sub-system**

It deals with the recording of purchases and issues of sale of products specifying the price, quantity and date. It generates the inventory position and valuation report.

**Purchase and Accounts Payable Sub-system**

It deals with recording of purhcases and managing payables. It also generates periodic reports about the performance of suppliers, payment schedule and position of the creditors.

**Payroll Accounting Sub-system**

It deals with payment of wages and salary to employees. It gives information about basic pay, dearness allowance, and other allowances and deductions from salary and wages on account of provident fund, taxes, loans, advances and other charges. The system generates reports showing total pay of the employees .

**Fixed Assets Accounting Sub-system**

It deals with the recording of purchases, additions, deletions, usage of fixed assets such as land and buildings, machinery and equipments, etc. it also generates reports about the cost, depreciation, and book value of different assets.

**Tax Accounting Sub-system**

This sub-system deals with compliance requirement of various taxes. This sub-system used in large size organisation.

**Final Accounts Sub-system**

This subsystem deals with the preparation of Profit and Loss account / Balance Sheet and other statements for reporting purposes.

**Costing Sub-system**

It deals with recording of cost of materials, labour and other expenses with a view to ascertain cost of goods produced.

**Budget Sub-system**

It deals with the preparation of budget for the coming financial year as well as comparison of actual performances with the current budget.

## Summary

- CAS is a system used by businesses for recording the financial information using computers and various accounting software.
- The features of CAS include;
  Simple and integrated, transparency and control, accuracy and speed, scalability and reliability
- CAS has five components namely procedure, data, people, hardware and software.
- Data element is the smallest unit of data. Data when processed become information.
- The term accounting cycle refers to the specific steps that are involved in the completion of accounting process.
- There is a hierarchical relationship between the groups and its components.
- Codification of accounts refers to allotting code numbers to accounts in a hierarchical structure. The grouping and codification depend upon the type of organisation and the extent of sub-divisions required.
- Codes can be of sequential codes, block codes and mnemonic codes.
- Every accounting software ensures data security, safety and confidentiality.
- The merits of CAS include;
  Timely generation of reports, efficient record keeping, less time and cost, confidentiality of data, transparency,reliability, and updated information
- The demerits of CAS include;
  Danger of Hawkers, technological problems, skilled employees are required, chance of data loss, huge training costs of employees and obsolescence of technology.
- CAS integrates the entire sub systems of the organisation and provides a sound accounting information system.

## I can

- describe the need of computerized accounting
- identify the various components of Computerised Accounting System (CAS)
- explain the need, importance and methodology of grouping and codification of accounts
- describe the uses of a software for CAS
- list out the merits and demerits of CAS
- list out the various sub systems of accounting information system and their functions

## TE QUESTIONS

1. The code 301-399 for cosmetics is an example of .............. code.
   a. Sequential  b. Block  c. Mnemonic  d. Numeric
2. Find the odd one out.
   a. Data  b. People  c. Hardware  d. Virus
3. Mention the name of any two coding methods with examples.
4. Classify the following into mnemonic codes, sequential codes and block codes.
   a. CA, CL – for current assets and current liabilities.
   b. 001, 002 for customer A and B.
   c. 001 to 099 – soaps, 100 to 199 - face powder.
5. Computerised accounting has several merits over manual accounting. Describe any four.
6. Write a coding structure for a higher secondary school having Science, Commerce and Humanities batches of 1 each. Duration of course is 2 years maximum students in the class is 50. Second language available there are Hindi, Malayalam and Sanskrit.
7. Describe the accounting information system and its sub systems.

UNIT 2

# SPREADSHEET

## Key Concepts



## Introduction

One of your friends - Lakshmi approaches you and asks your help with a project she is working on. Lakshmi wants to prepare a list of scores obtained by the students of a higher secondary school in Palakkad town. There are 60 students each in three streams namely Commerce, Science and Humanities. The list must include the name of student, batch, sex, and scores obtained by them in the final examination. She also needs to identify the top scorer and percentage for each batch. Lakshmi knows that it is difficult to do this work with pen and paper.

- She seeks your help. Suggest the best software for doing this task.
- What are the calculations we can do with this software?

From your earlier experiences, you know that spreadsheet is particularly a handsome choice of application software when a task involves working with numerical data. Anyone can use a spreadsheet for their work in office, school, personal projects or other purposes. This is regarded as one of the most commonly used analysis and reporting tools. People are using spreadsheet at home for keeping track of their finances, calculation of income tax and even for recording important events chronologically. Its in-built formulae and functions hold the key to analyse data - that is digging out nuggets of important information on various aspects. All these have made spreadsheet an essential tool for many business professionals in the fields of presentation, illustration, budgeting, and payroll preparations. From the above discussion, can you list down some uses of spreadsheet in accounting other than the above?

- Sales report preparation
- Inventory analysis
- 

Several spreadsheet softwares like Gnumeric, Calligra Sheets, Lotus-123, Microsoft Excel, OpenOffice Calc, LibreOffice Calc etc. are available to perform the above functions. In this unit we shall discuss about the various aspects of LibreOffice Calc which is included in LibreOffice package.

**Let's know more ...**

### *History of Spreadsheets*

*The word 'spreadsheet' came from 'spread', to refer to a newspaper or magazine item that covers two facing pages. Daniel Bricklin is regarded as the 'Father of electronic spreadsheet'. In 1978, Harvard Business School student, Daniel Bricklin came up with the idea for an interactive visible calculator. Bricklin and Bob Frankston then co-invented or co-created the software program VisiCalc. The name 'VisiCalc' is a compressed form of the phrase 'visible calculator'. VisiCalc is considered as the first spreadsheet program that combined all essential features of a modern spreadsheet. Later, Mitch Kapor developed Lotus and his spreadsheet program quickly became the new industry spreadsheet standard. Lotus 1-2-3 is the first spreadsheet software established as a major data presentation.*

## 2.1 Electronic Spreadsheets

Electronic spreadsheet is a computer application software that provides interactive pages similar to a calculator, which allows the user to arrange and organise huge volume of data in a tabular form. Spreadsheets facilitate arithmetic calculations, arrange and analyse data and provide easy correction of errors.

A file in spreadsheet is known as a 'Workbook'. A workbook is a collection of a number of 'Worksheets'. At a time, only one worksheet can be made as active worksheet and that worksheet is available to a user for carrying out operations. Worksheet names will be shown in the 'Sheet Tab' at the bottom left of the window. Additional sheets can be added and its name can be changed, if required.

Let's know more ...

### *Free and Open-Source Software (FOSS)*

*Free and open-source software (FOSS) is the computer software that can be classified as both free software and open-source software. That is, anyone is freely licensed to use, copy, study, and change the software. The source code is openly shared so that people are encouraged to voluntarily improve the design of the software. This is in contrast to proprietary software,(like Windows) where the software is under restrictive copyright and the source code is usually hidden from the users. The benefits of using FOSS include lower software costs, enhanced security and stability (especially with regard to Malware), protecting privacy and giving users more control over their own hardware. Free, open-source operating systems such as Linux are widely utilized today, powering millions of servers, desktops, smartphones (eg. Android) and other devices.*

### 2.1.1 LibreOffice Calc

LibreOffice Calc is a spreadsheet application that we can use to calculate, analyse, and manage data. It is included in LibreOffice Package, which is Free and Open Source software under the General Public Licence (GPL). LibreOffice Calc is available for a variety of platforms, including Linux, OS X, Microsoft Windows, and FreeBSD.

### 2.1.2 Features of LibreOffice Calc

As a spreadsheet, LibreOffice Calc has the following features:-

**1. Easy Calculations**

The software provides a lot of tools with which one can perform even complex calculations on different data spread across sheets with ease.

**2. What-If Calculations**

This lets users to predict what will happen if certain condition changes. For instance, you can see how change in interest rate affects the installment of a loan.

**3. Serves as a database**

A spreadsheet also performs the functions of a database. Even huge volume of data can be organised, stored and filtered without much efforts. This programme allows storing any number of data in different sheets.

**4. Arranging Data**

The data stored in a spreadsheet can be organised or reorganised according to the needs of the users. We can also apply formatting, sorting and filtering functions to customise as per the requirements.

**5. Dynamic Charts**

The inbuilt charts and graphs provide versatility in presenting the data in an appealing manner. Different types of charts are available in the application which cater to the various needs of the users.

## 2.2 Components of LibreOffice Calc

When LibreOffice Calc opens, the programme window displays a blank worksheet as shown in figure 2.1.

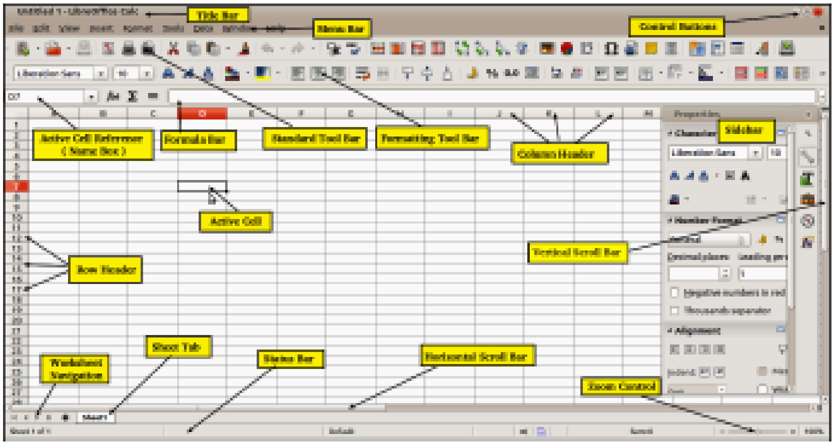



Fig. 2.1 Blank Worksheet

Navigating through the figure 2.1 will give a clear picture of the various components of a spreadsheet. Let us discuss some of the major components.

### 1. Rows and Columns

The Worksheet in LibreOffice Calc contains Rows and Columns in Table format. Rows are named numerically (1,2,.......) from top to bottom while Columns are referred by alpha characters (A,B,C,D,....) from left to right.

**Let's know more ...**

### *Inserting new Rows or Columns*

*We can add or delete Rows and columns in a Spreadsheet. To add column, click at the column header (right click on the mouse), there we get an option to add columns. In similar manner, we can add rows also by clicking on the row header. Delete option is also available in the pop up menu by right clicking on column or row header.*

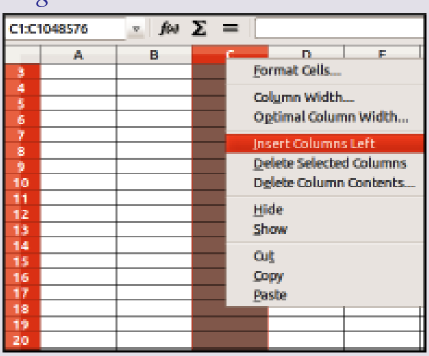



Fig. 2.2 Add new columns

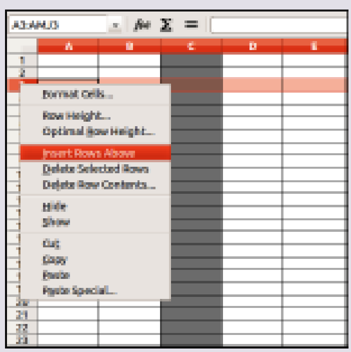



Fig. 2.3 Add new rows

**2. Cell**

In a spreadsheet, data are recorded in cells. The intersection of a Row and a Column is called a cell. A cell is identified by a combination of a letter (column header) and a number (row header).For example, the first cell of a worksheet is identified as A1. From the figure 2.4 can you name the cell? The cell name is 'C4'. Each cell thus has a unique identification known as 'Cell Address'.

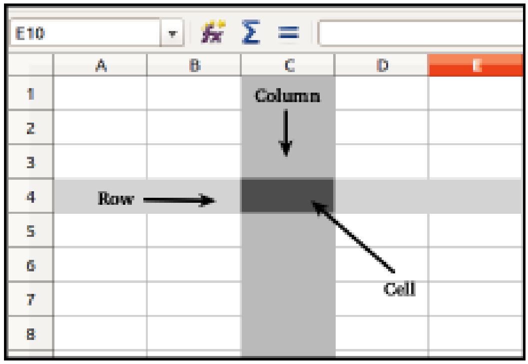



Fig. 2.4 Cell of a Worksheet

**3. Range**

Range is a group or block of cells that are highlighted in a worksheet. A range may contain just a single cell or many cells.

How can we express a range of cells?

This is specified by giving the address for first cell in the range and the last cell in the range. For example, B2:D8 represents the range starting from B2 to D8. We use colon (:) as the range operator. Refer the figure 2.5.

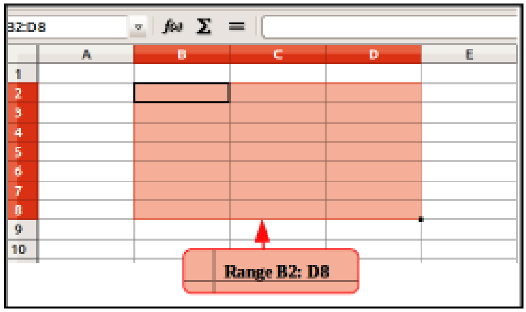



Fig. 2.5 Range in a Worksheet

## Naming Ranges

This means giving a name to a specific range. For example, scores obtained by the students of your class in Accounting is given in the range C2:C15. You can name this range as "Score". Now this range name can be used in various formulae or functions instead of quoting cell range. This enables us to save time and avoid complexity while framing formulae. For example, to calculate the 'Average Score', use the formula as =AVERAGE(Score), instead of =AVERAGE(C2:C15).

The procedure for 'Naming ranges' and its use in formula is illustrated below:

- Enter the scores of each student in a worksheet as shown in figure 2.6.

| | A | B | C |
|---|---|---|---|
| 1 | Class No. | Name | Acc |
| 2 | 1 | Arunkumar K. P. | 62 |
| 3 | 2 | Balachandran M. A | 43 |
| 4 | 3 | Chadrababu N. | 42 |
| 5 | 4 | Davasia P. V. | 56 |
| 6 | 5 | Emily Sebastian | 71 |
| 7 | 6 | Filsy Mathew | 34 |
| 8 | 7 | George P. V | 25 |
| 9 | 8 | Haridas P. | 28 |
| 10 | 9 | Ismayil P. P. | 39 |
| 11 | 10 | Joseph P. V. | 56 |
| 12 | 11 | Kurian Chariyan | 65 |
| 13 | 12 | Lasiyamol Joseph | 23 |
| 14 | 13 | Manoj K. K | 36 |
| 15 | 14 | Narayanan P. P. | 45 |

Fig. 2.6 Score sheet

Select the cells which are to be named. Here, select C2:C15 and got to

**Insert → Names → Define...**

Then, the window 'Define Name' appears in the screen as shown in figure 2.7.

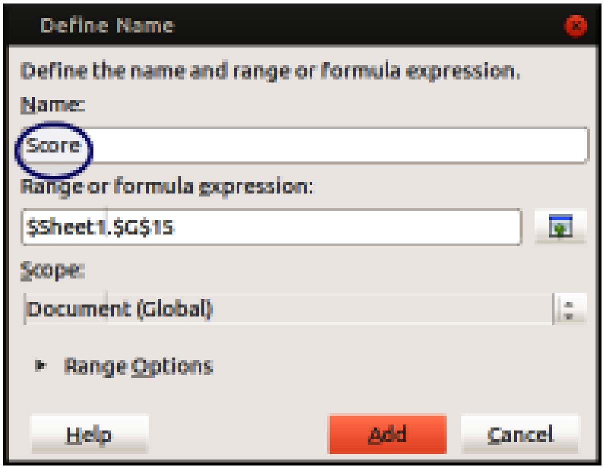



Fig. 2.7 Define Name Window

- Enter the name of range (Score) in the window appeared and click 'Add'.
- Now this range name - 'Score' can be used in various formulae or functions.
- Use the name of the range in each formula by inserting it from the 'Names' option available in 'Insert' menu.

**Insert → Names → Insert....**

Then, the window 'Paste Names' appears as shown in figure.2.8.

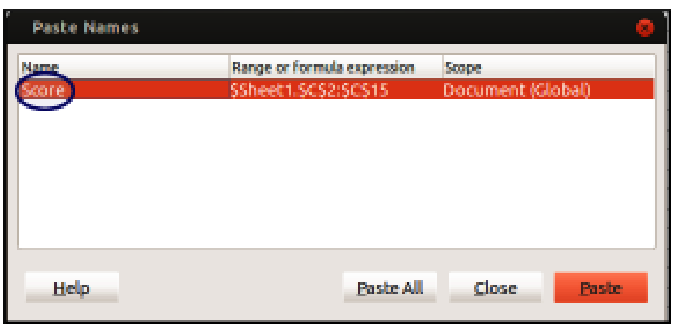



Fig. 2.8 Paste Names Window

- Select the name 'Score' and click on 'Paste' button.
- Then, the name 'Score' will appear in the formula. Pressing 'Enter' key will return the result. See the figure 2.9.

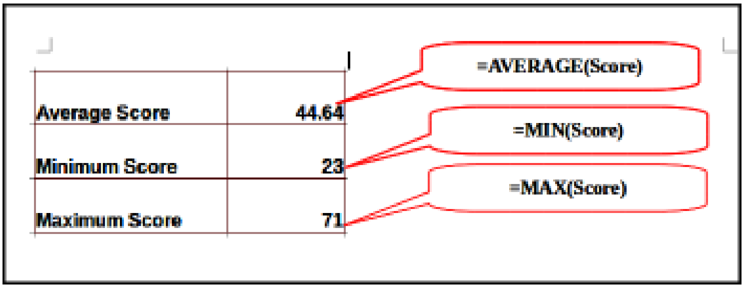



Fig. 2.9 Using named ranges in Formulae

### Let's assess

1. *LibreOffice Calc is a .................................. software.*

   *(a) Presentation*     *(b) Data base*

   *(c)Text document*     *(d) Spreadsheet*

2. *The intersection of rows and columns in a worksheet is called .............*

3. *A spreadsheet file is called ................*

   *(a) Worksheet*     *(b) Workbook*

   *(c) Range*     *(d) Pop-up menu*

4. *A group of adjacent cells that forms a rectangular area is called ............*

## 2.3 Spreadsheet Operations

Some useful spreadsheet operations are discussed below:

**1. Open Work sheet**

While being on the Calc, you can open a new workbook by choosing 'New' option or by clicking the respective icon from the 'File' menu.

An existing workbook can be opened by choosing 'Open' option in the File menu or by clicking the 'icon' on the standard tool bar.

**2. Save a Worksheet**

You know that all the files need to be saved in the computer once your work is completed, if you want them to be used in future. 'Save' option in the File menu enables you to save a workbook to the computer. 'Save' icon on the standard tool bar can also be used to save a file. The 'Save As' option is used to save the same file in a different name, location or format.

**3. Close work sheet**

After you finish working in a workbook, you can close the workbook with 'Close' option from the 'File' menu. Then another workbook can be opened without closing the Calc.

**4. Quit LibreOffice Calc**

Quitting the Calc is different from closing a workbook. On closing the workbook, that particular file will be closed, but Calc application will be still working. On quitting, the entire application will be unloaded from the active memory of the computer. For this, use 'Exit LibreOffice' option from the file menu. To protect our files, always quit Calc before turning off the computer.

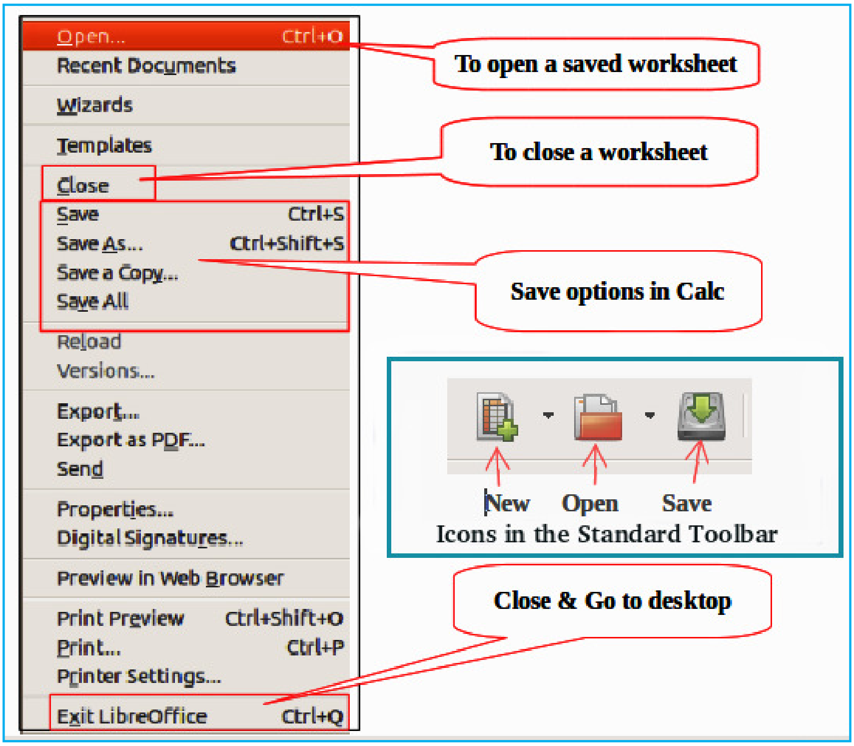



Fig. 2.10 Basic Spreadsheet Operations

**5. Add worksheet**

By default only one worksheet is available. What needs to be done if you want additional worksheets? You can follow any of these steps.

(a) Right click the mouse at sheet tab area and select 'insert Sheet' from the popup menu.

(b) Alternatively, by clicking on the 'Plus mark' near the sheet tab you can insert as many sheets as you need.

**6. Delete worksheet**

To delete an unwanted worksheet, right click the mouse on the sheet tab to be deleted and select the 'Delete Sheet' option from the popup menu.

**7. Rename worksheet**

By default, worksheets are named as Sheet 1, Sheet 2, and Sheet 3 etc. A worksheet can be renamed by selecting the option 'Rename Sheet' from the popup menu on a right click of sheet tab. Give the name desired and click OK. New name will appear on the sheet tab.

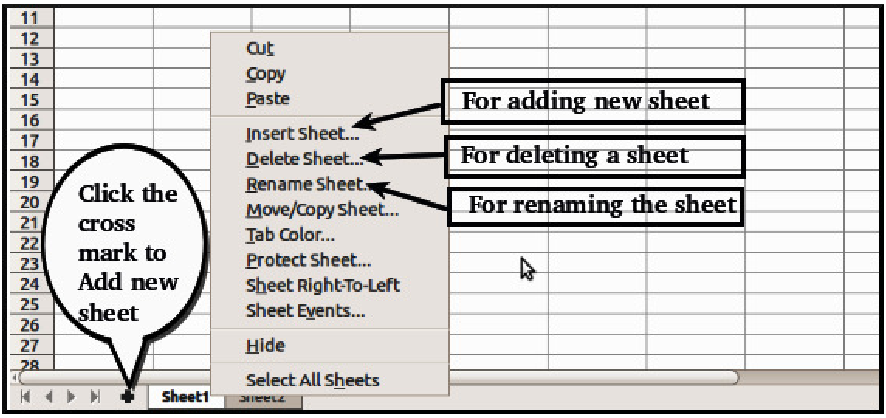



Fig. 2.11 Insert, Delete and Rename sheet

## 2.3.1 Spreadsheet Navigation

How can you move rapidly with in a worksheet?

Following navigation methods are available here:

a. **Using Mouse:** You can place the mouse pointer over the cell and click on it.

b. **Using a cell reference :** Click on the little inverted black triangle just to the right of the Name Box on the formula bar .Type the cell reference of the cell you want to go to and press Enter. You may also just click into the Name Box, backspace over the existing cell reference, and type in the cell reference you want.

c. **Using the Navigator :** Click on the Navigator button in the Vertical scrollbar (or press F5) to display the Navigator. Type the cell reference in the Column and Row fields, and press Enter. The navigation window appears as in figure 2.12.

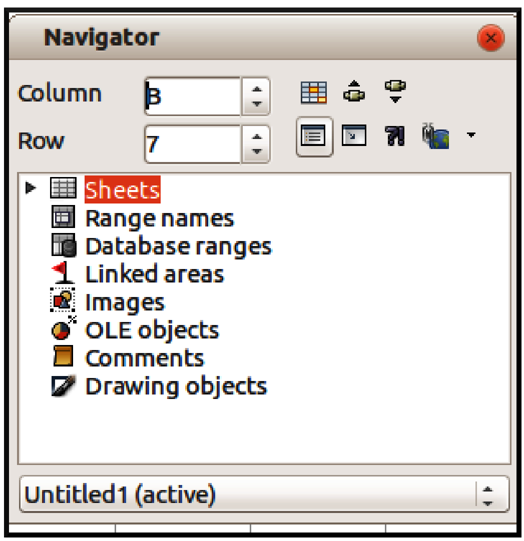



Fig. 2.12 Navigation window

| *Keyboard short-cuts for navigating around Spreadsheet* | |
|---|---|
| **Movement** | **Key Stroke** |
| One cell down | Down arrow key or Enter key |
| One cell up | Up arrow key or Shift + Enter key |
| One cell right | Right arrow key or Tab key |
| One cell left | Left arrow key or Shift + Tab key |
| Top of Sheet (cell A1) | ***CTRL + HOME*** |
| The cell at the intersection of the last row and last column containing data | ***CTRL + END* keys** |
| Moves the cursor to the right most cell with data in the current row. If there is no data in the current row, the cursor moves to the last cell in that row. | **CTRL + Right arrow key** |
| Moves the cursor to the bottom cell with data in the current column. If there is no data, the cursor moves to the last cell in the current column. | **CTRL + Down arrow key** |
| Beginning of the Row | **HOME key** |
| Moves the cursor to the extreme left cell with data in the current row. If the current row is empty, the cursor moves to the first cell in that row. | **CTRL + Left arrow key** |
| Moves the cursor to the top most cell with data in the current column. If the current column is empty, the cursor moves to the first cell in that column. | **CTRL + Up arrow key** |
| Moves cursor to the last cell in the column with data in the current row. | **END key** |

## 2.4 Types of worksheet Data

In the cell of a worksheet usually three types of data are entered:

(a) Value

(b) Label

(c) Formula

(a) **Value:-** Value is a number that you enter in a cell. Thus, numerical data is called a value. It also includes currency symbol, minus sign (-), plus sign (+), decimal point (.) and comma (,). The worksheet accepts positive values and negative values. By default values are right-aligned. Calculations can be done using the values only. For example: Age of employee, Salary of employee etc.

(b) **Label:**- The text data is called label. It includes alphabets and symbols. They are non-numeric data but may include digits also. By default, labels are left-aligned. For example: Name of Employee, Sex, Designation etc.

(c) **Formula:**- The worksheet cells also contains formula to perform calculations. When a formula is entered in a cell the result of the formula will be displayed on pressing the 'Enter' key. The actual formula is displayed on the 'input line' of the spreadsheet. Formula should always begin with an equal sign (=). Even if a formula begins with mathematical symbols + (plus) or - (minus), the software will prefix = (equal to) sign in the formula.

## 2.5 Components of a Formula

Formulae are Calc's most powerful aid for getting your work done. Formulae usually speed up the creation of your worksheet. You don't need to worry about whether the calculation is correct because Calc doesn't make mistakes. Best of all, if you change any value in a formula, Calc automatically update the results.

Now it's time to think in terms of what constitutes a formula?

A standard formula may have three components:

(a) Cell References

(b) Mathematical operators

(c) Functions

### 2.5.1 Cell References

The cell co-ordinates in a formula are called cell reference. A cell reference identifies the location of a cell or group of cells in the spreadsheet. In other words, the cell address used in a formula is called cell reference. A cell reference may be relative, absolute and mixed.

**(i) Relative Cell Reference**

Let us see how relative reference works.....

Suppose in E5 you enter a formula =C5+D5 and press enter key the result will be displayed in cell E5. If you copy the above formula to cell E6 the new formula will read as =C6+D6. With relative referencing you can create a formula in one column and then just copy this formula to other columns.

By default cell reference is relative. Here when a formula is copied to a new location in a worksheet, cell references in the formula change in relation to the new location of the formula.

### (ii) Absolute cell reference

When you copy a formula or function, absolute reference is used to keep a cell reference constant. The cell references in a formula remain the same even when the formula is copied to a new location. For absolute cell referencing, you need to use the $ (dollar) symbol as prefix before the column and row names in a formula. $A$5 is example an for absolute reference.

### (iii) Mixed cell reference

You know that a cell address has two parts- first part denotes column letter and second row number.

If any one part is prefixed with a dollar ($) sign leaving the other part plain then it is termed as mixed reference. For example, $B4 or B$4 is mixed reference. This is a combination of relative and absolute cell references.

## 2.5.2 Mathematical operators

If you need to create a formula, you must include a mathematical operator. The following table tells you about various types of operators -

a. Arithmetic
b. Comparison
c. Reference

| Operation performed | Operator symbol |
|---|---|
| **Arithmetic Operators** | |
| Addition | + |
| Subtraction | - |
| Multiplication | * |
| Division | / |
| Percent | % |
| Exponential | ^ |
| **Comparison Operators** | |
| Equal to | = |
| Greater than | > |
| Less than | < |
| Greater than or Equal to | >= |
| Less than or Equal to | <= |
| Not equal to | <> |
| **Reference Operators** | |
| Range operator | : |
| Union operator | , |

### 2.5.3 Functions

We have already discussed about formula. How is it different from a function? The following discussion will make it clear.

Functions are the pre-defined formulae in spreadsheet that return a specific result. It is a built in set of formulae which starts with an 'equal to sign' (=). It is a special key word which can be entered into a cell in order to perform and process the data which is appended within brackets. A function differs from a formula in the sense that the former is designed by the software, but the latter is user designed. In a function we should give only the cell references, but not the arithmetic operators. Functions perform calculations by using specific values called 'arguments', in a particular order called 'syntax'.

*You should remember the following while using a function:*

- *Use an equal sign (=) to begin the function.*
- *Specify the function name. (Example : SUM)*
- *Enclose all the arguments within brackets.*
- *Use comma to separate the individual arguments in a function.*
- *Strictly follow the syntax of the function.*

You might have noticed this button '*f(x)*' (called as function wizard) on the formula bar. (see fig 2.14). When we click it, function offers assistance and prompts into a spreadsheet cell. Alternatively, we can enter the function directly into the formula bar. We can also select any function by clicking 'function' at the Insert tab or by pressing Ctrl+F2.

AVERAGE, COUNT, MIN, MAX, SUM etc. are some of the commonly used functions which are relatively easy to understand. These functions with its results are shown in figure 2.13.

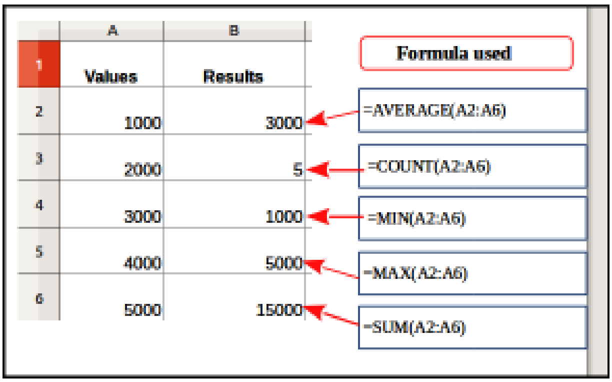



Fig. 2.13 Using Functions

### Autosum (Σ)

The AUTOSUM (Σ) function is the most basic and one of the commonly used functions. It is used to get the total (sum) of various numbers. For example if you need to get the sum of cells A2:C2 in Cells D2, select the cell D2 and click on sum button in the formula bar and then press enter key. To get the result in any other cell in the worksheet, select the required cell, click on SUM button and highlight the range A2:C2 and then press Enter key. (See Fig 2.14).

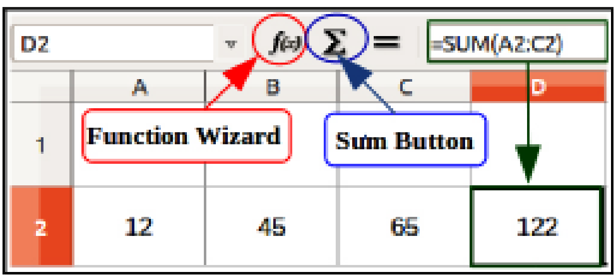



Fig. 2.14 Function Wizard & SUM Button

**Let's assess**

1. *In spreadsheets, 'Save' option is available in ..............menu.*
2. *The numerical data entered in a spreadsheet cell is called a ..........*
3. *By default, Labels entered in a spreadsheet have ........... alignment.*
4. *In a spreadsheet, formula should always begin with ............*
   *(a) Equal sign* *(b) Plus sign*
   *(c) Minus sign* *(d) Any of these*
5. *Dollar symbol is prefixed on the column and row names in a formula is:*
   *(a) Absolute cell reference* *(b) Relative cell reference*
   *(c) Mixed cell reference* *(d) All of these*
6. *Pre-defined formulae in spreadsheets are called .....................*

## 2.6 Classification of Functions

Numerous inbuilt functions are available in LibreOffice Calc, but for the time being our study is limited to the following.

1. Date & Time Functions
2. Statistical Functions
3. Logical Functions
4. Mathematical Functions
5. Text Functions
6. Spreadsheet Functions
7. Financial Functions

### 2.6.1 Date & Time Functions

This function is used to perform operations on date and time values. This includes fetching today's date, current time, calculating number of days between two given dates etc.

In effect Date and Time functions are used for inserting, editing and manipulating date and time. LibreOffice calc internally handles a date/time as a numerical value. If you assign the format "Number" to a date or time, it is converted to a number. For example, the date 01/01/2017 is converted to 42736. This number can be converted in to date format by changing the format as date or time.

You may change the default date format from the tools option (see figure 2.15).
The path is:

Tools → Options → LibreOffice Calc → Calculate

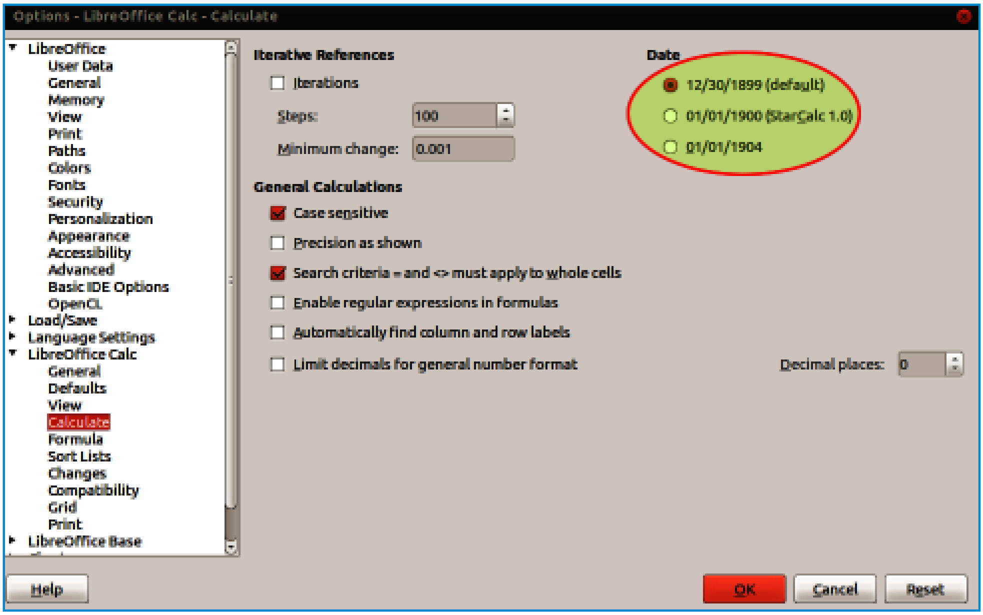



Fig. 2.15 Setting Default date format

The use of " / " or " - " in date may be interpreted as arithmetic operators . So date values used in Calc's function must be entered in double quotes.

For Example "01/01/2017".

The most commonly used Date & Time functions are :

- **TODAY**

This function returns the current computer system date in the cell. The current date is automatically returned when we open the document on a future date. TODAY is a function without arguments.

Syntax : =TODAY( )

Example :

Suppose today is 16th December 2017 and if we enter TODAY( ) function in a cell =TODAY( ), it will return 16/12/2017 as current date.

- **NOW**

NOW function displays the current system date and time. It differs from the TODAY function in the sense that it returns current time along with current date. It is also a function without arguments.

Syntax : =NOW( )

Example : If you enter NOW( ) function in cell B1 on 20th July 2017 at 04.39 PM, it will return 20/07/17 16:39 in B1.

- **YEAR**

YEAR function returns the 'year' from the date or date value given in the brackets.

Syntax:- =YEAR("Date")

Example : =YEAR("01/05/2016") returns 2016 as shown in figure 2.16

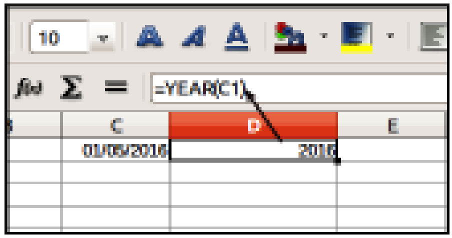



Fig. 2.16 Example of YEAR function

- **MONTH**

MONTH function returns the month of a given date as an integer between 1 and 12.

Syntax: =MONTH("date")

Examples: =MONTH("05/08/2016") returns the result- 8 as shown in figure 2.17

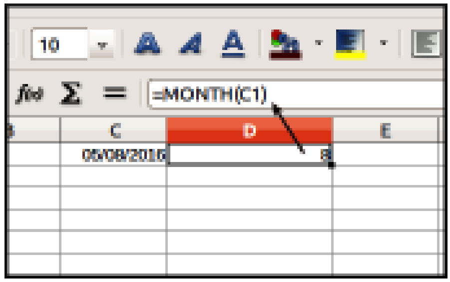



Fig. 2.17 Example of MONTH function

- **DAY**

DAY function returns integer value of a given date( between 1 and 31).

Syntax:- =DAY("date")

Examples :- =DAY("25/05/2016") return 25

- **DATE VALUE**

LibreOffice Calc considers 30/12/1899 as the base date with date value zero(0). Based upon this, DATEVALUE function converts the given date and return its corresponding date value number.

*In LibreOffice Calc 30/12/1899 has been set as the default date with date value zero(0).The number is determined by date settings in the **Tools** menu. We can change the default date to **01/01/1900 or 01/01/1904** as shown in figure 2.15.*

Syntax : =DATEVALUE("Text")

The 'Text' parameter implies that date must be given as text. Giving date in double quotes will consider the date as text. Date without quotes will return an error message(Err502)

Example:- =DATEVALUE("31/01/2017") - Display 42766 as shown in figure 2.18

| Formula Used | Result |
|---|---|
| =DATEVALUE("30/12/1899") | 0 |
| =DATEVALUE("31/12/1899") | 1 |
| =DATEVALUE("01/01/1900") | 2 |
| =DATEVALUE("01/01/2000") | 36526 |
| =DATEVALUE("01/12/2015") | 42339 |
| =DATEVALUE("01/01/2018") | 43101 |

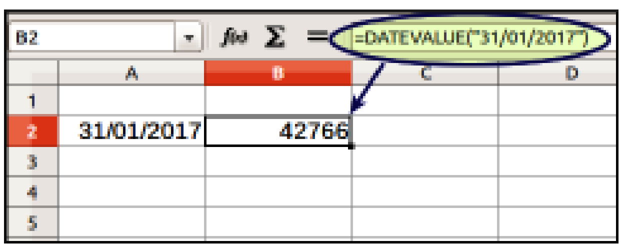



Fig. 2. 18 Example of DATEVALUE function

For ascertaining year, month and day, we may use datevalue instead of date while using YEAR, MONTH and DAY functions. Their syntax are:

=YEAR (datevalue)
=MONTH(datevalue)
=DAY(datevalue)

Let us calculate the year and month of datevalue 42766 (Date "31/01/2017") by using YEAR and MONTH functions :

=YEAR (42766) returns 2017 as shown in Fig 2.19

=MONTH(42766) returns 1 as shown in Fig 2.20.

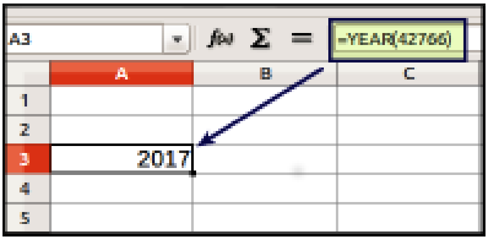



Fig. 2.19 Example of YEAR function

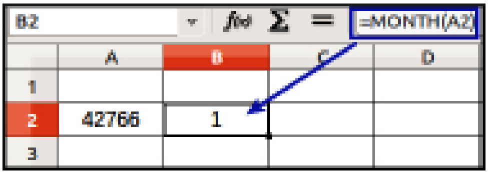



Fig. 2.20 Example of MONTH function

- **DATE**

This function returns a date, when the year, month and day parameters are given as integer separated by commas.

Syntax : =DATE(Year, Month, Day)

Example: =DATE(2017,12,08), it is displayed as - 08/12/17 as shown in Figure 2.21

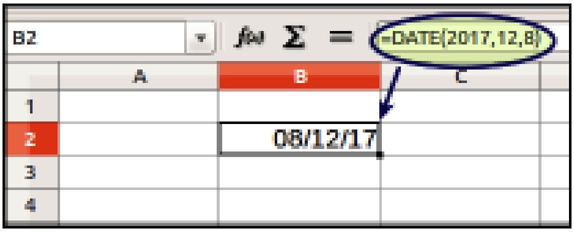



Fig. 2. 21 Example of DATE function

**Various date formats available in Calc**

| DATE Function | Cell Format | Result |
|---|---|---|
| =DATE(2017,12,23) | DD/MM/YYYY | 23-12-2017 |
| =DATE(2017,12,23) | Number – General | 43092 |
| =DATE(2017,12,23) | DD/MM/YY | 23-12-17 |
| =DATE(2017,12,23) | D MMMM YYYY | 23 December 2017 |
| =DATE(2017,12,23) | NNNND MMMM YYYY | Saturday, 23 December 2017 |

## Try Yourself

Show the following :

(a) Display Current system date in Cell B2

(b) Display Current system date and time in Cell B3

(c) Display Year from the given date 31/12/2017 in Cell B4

(d) Display Month from the given date 31/12/2017 in Cell B5

(e) Display Date from the given date 31/12/2017 in Cell B6

(f) Display Numerical value corresponding to the date 31/12/2017 in cell B7

(g) Calculate your age by using DATEVALUE() function.

## *Let's assess*

1. *Identify the function which converts date into the corresponding internal date number.*

   *(a) TODAY (b) DATEVALUE (c) NOW (d) DATE*

2. *Identify the function which displays the current system date.*

   *(a) TODAY (b) DATEVALUE (c) NOW (d) DATE*

3. *Which function returns the system date and time?*

### 2.6.2 Statistical Functions

Statistical function operates on a set of data and gives summarised results. LibreOffice Calc provides a number of statistical functions, such as AVERAGE, MIN, MAX, COUNT etc. A few of them are discussed in this section.

- **COUNT**

This function returns the count of numeric value used in a given range of cells. Only numbers, dates and time are counted here. Empty cells, logical values, text and error codes are not considered.

For example, the Fig 2.22 contains some values from cells A1 to D3. If you apply the formula =COUNT(A:D3) in cell E3, Calc returns the value as 5. Here you can see that blank columns, text values etc. are not considered.

Syntax : =COUNT(Value1,Value2.....)

=COUNT (Range )

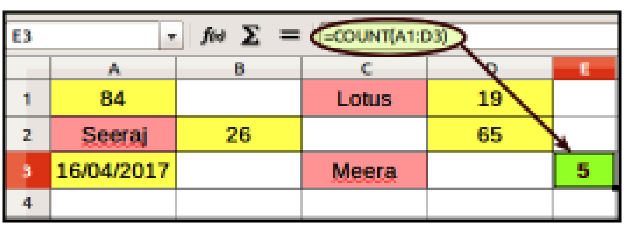



Fig. 2.22 - Example of COUNT function

- **COUNTA**

The COUNTA function counts the total number of cells which contain any value. It will count numbers, text, date, time, logical values, and error codes in the specified range or list of arguments. But empty cells are not counted here.

If you apply the formula =COUNTA(A1:D3) in the example shown in figure 2.22, it returns the result as '8' in cell E3 by avoiding the blank cells in that range specified.

Syntax : =COUNTA(Value1,Value2.......)

=COUNTA(Range)

- **COUNTBLANK**

COUNTBLANK function counts the number of empty cell in the given range. It is the opposite function of COUNTA.

Syntax : =COUNTBLANK(Range)

Example : =COUNTBLANK(A1:E1) gives the result as shown in figure 2.23 as there is only one blank cell.

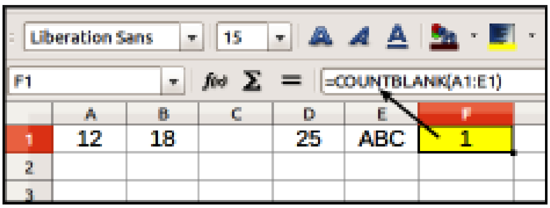



Fig. 2.23: Example of COUNTBLANK function

- **COUNTIF**

This function counts the number of cells within a given range that meets the user defined criteria or condition.

Syntax : =COUNTIF(Range,Criteria)

Where,

Range - It is the set of cells to which the criteria are to be applied.

Criteria - it can be a number, an expression, cell reference or a character string. For example, criteria can be expressed as 5000, ">32", "Commerce", or C4. If you search for literal text enclose the text in double quotes.

For example, see the given Fig. 2.24 in which A2:A11 contains numbers from 2000 to 2009 and in cell B2 the number 2006 is also included. The table shows clearly how COUNTIF function can be used with different criteria in column 'C' and its output is shown in the next column.

| | A | B | C | |
|---|---|---|---|---|
| 1 | | | Formula | Result |
| 2 | 2000 | 2006 | =COUNTIF(A2:A11,2006) | 1 |
| 3 | 2001 | | =COUNTIF(A2:A11,B2) | 1 |
| 4 | 2002 | | =COUNTIF(A2:A11">=2006") | 4 |
| 5 | 2003 | | =COUNTIF(A2:A11,"<"&B2) | 6 |
| 6 | 2004 | | =COUNTIF(A1:A10,"<0") | 0 |
| 7 | 2005 | | | |
| 8 | 2006 | | | |
| 9 | 2007 | | | |
| 10 | 2008 | | | |
| 11 | 2009 | | | |

Fig. 2.24 Example of COUNTIF function

**Statistical Functions at a glance**

| Function | Syntax | Description |
|---|---|---|
| COUNT | =COUNT(Range) | Counts the number of cell in a range that contain numbers |
| COUNTA | =COUNTA(Range) | Counts the number of cells which contain any value including text |
| COUNTBLANK | =COUNTBLANK (Range) | Counts the number of empty cell in the given range |
| COUNTIF | =COUNTIF (Range,Criteria) | Counts the number of cells within a given range that meet the given criteria |

### 2.6.3 Logical functions

Logical functions are used to compare two values or statements. The commonly used logical functions are IF, AND and OR. All logical functions returns either logical True or logical False when their functions are evaluated.

- **IF**

When we need to test a condition, whether it is true or false, then usually IF function is used. This function will analyse a logical test that you define and give a certain result based on the given condition. You are also able to determine exactly what happens if logical test is true or if the logical test is false.

Syntax : =IF(Test, Then_Value, Otherwise_Value)

Where,

Test is any value or expression that can be TRUE or FALSE. This requires the use of a logical operator such as =, >, <, >=, <=, <>.

Then_Value is the value that is returned if the logical test is TRUE.

Otherwise_Value is the value that is returned if the logical test is FALSE.

Example : =IF(C2>=40,"PASSED","FAILED")

Here, if the value given in C2 is greater than or equal to 40, the function gives the result "PASSED", Otherwise returns the reult "FAILED".

Consider the following example:

Names and scores of few students in an examination are given in Fig 2.25. Insert your argument as students who scored above 40 as "PASS" and otherwise "FAIL". You can enter the formula as:

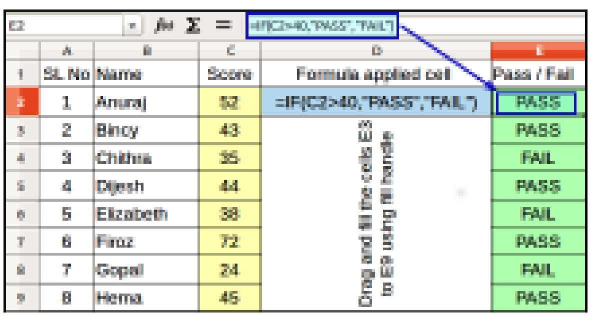



Fig. 2. 25 - Using IF functions

=IF(C2>40,"PASS", "FAIL"), press enter key and copy the formula to other cells.

The results are also shown in the figure 2.25

The procedure for using 'IF function' with the help of function wizard is as follows.

1. Activate the cell where the function is to be used (E2)
2. Select Function from the Insert menu
3. Select "Logical" from the category option followed with IF function from the left pane of the wizard
4. Then enter C2>40 in the Test field, followed by "PASS" and "FAIL" in the next two fields, as shown in Fig. 2.26. The Formula will show up in the column provided as

   =IF (C2>40, "PASS","FAIL")
5. Click on OK tab and the result will be displayed in cell E2. Copy the function from E3 to E9.

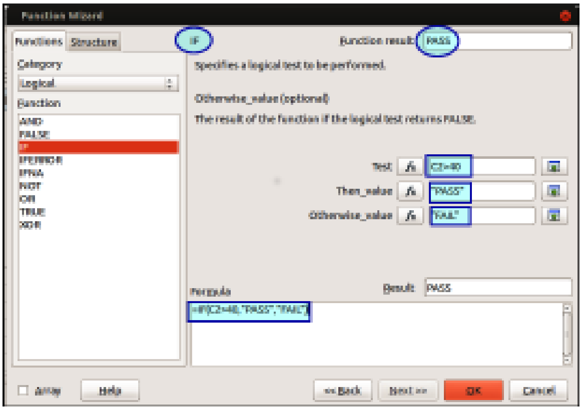



Fig. 2. 26 Using IF function through Wizard

## • Nested IF

From the above discussion you might have understood that, IF function which tests single criteria is very simple and straight forward. But, what is to be done if your data requires more logical tests with multiple conditions?

In such a situation you can include several IF conditions in one formula, and these multiple IF statements are called 'NESTED IF'. The biggest advantage here is that you can test more than one condition and return different values in a single formula.

Syntax :

=IF(Test_1, ThenValue_1,IF(Test_2,ThenValue_2,IF(.............................)))

Let us explain the concept with the help of the following example.

The name and scores obtained by some students are given. You are required to ascertain their grades on the basis of the criteria specified.

Grade Criteria : A+ (90- 100); A (80-89); B+(70-79); B(60-69);C+(50-59); C(40-49); D+ (30 -39); D - below 30.

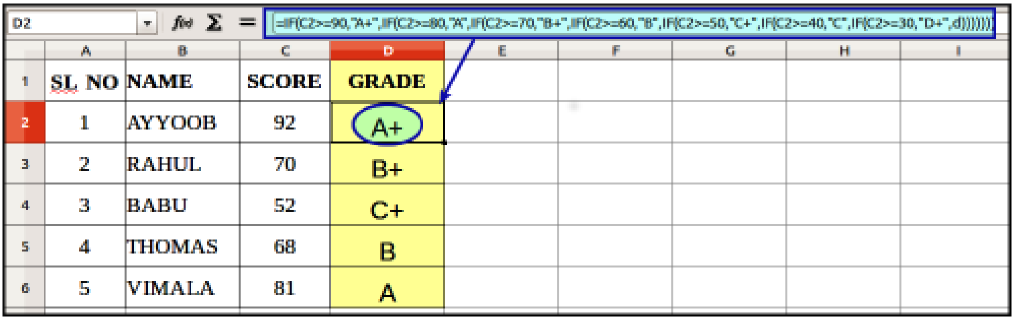
Try this given formula in D2. In this case, if the first condition tested is FALSE, the application will test the next condition and so on. (See figure 2.27)

| | A | B | C | D |
|---|---|---|---|---|
| 1 | SL NO | NAME | SCORE | GRADE |
| 2 | 1 | AYYOOB | 92 | |
| 3 | 2 | RAHUL | 70 | |
| 4 | 3 | BABU | 52 | |
| 5 | 4 | THOMAS | 68 | |
| 6 | 5 | VIMALA | 81 | |

=IF(C2>=90,"A+",IF(C2>=80,"A",IF(C2>=70,"B+",IF(C2>=60,"B",

IF(C2>=50,"C+",IF(C2>=40,"C",IF(C2>=30,"D+","D")))))))

(Note that in a formula brackets should be used in pairs)


D2 =IF(C2>=90,"A+",IF(C2>=80,"A",IF(C2>=70,"B+",IF(C2>=60,"B",IF(C2>=50,"C+",IF(C2>=40,"C",IF(C2>=30,"D+",d)))))))

| | A | B | C | D |
|---|---|---|---|---|
| 1 | SL NO | NAME | SCORE | GRADE |
| 2 | 1 | AYYOOB | 92 | A+ |
| 3 | 2 | RAHUL | 70 | B+ |
| 4 | 3 | BABU | 52 | C+ |
| 5 | 4 | THOMAS | 68 | B |
| 6 | 5 | VIMALA | 81 | A |

Fig. 2. 27 - Nested IF

- **AND**

AND function is used to determine whether the output will be TRUE or FALSE. It comes in handy when all the conditions are to be tested and made sure that all are met. It returns TRUE if all the arguments evaluated are TRUE. If any argument is FALSE, this function returns the FALSE value.

Syntax : =AND(LogicalValue1, LogicalValue2, ......LogicalValue30)

**The outcomes of AND function in various cases**

| Formula | Description | Result |
|---|---|---|
| =AND(10<13,14>12,7>6) | All arguments are true | TRUE |
| =AND(10>13,14>12,7>6) | One Argument is false | FALSE |
| =AND(10>13,14=12,7<6) | All Arguments are false | FALSE |
| =AND(2+2=4,5+3=8) | All arguments are true | TRUE |
| =AND(2+2=5,5+3=8) | One Argument is false | FALSE |
| =AND(2+2=5,4+3=8) | All Arguments are false | FALSE |

AND function in combination with other functions, provides enormous possibilities to a worksheet.

Consider the given example:

The scores of students in two subjects Accountancy and Business Studies are given below. Find the students who satisfy the arguments given in the last column using AND function.

### Score sheet of students

| Name | Scores | | Argument |
|---|---|---|---|
| | Accountancy | Business studies | |
| Reshmi | 50 | 45 | Accountancy score more than 50 and business studies score more than 40 |
| Manohar | 35 | 60 | |
| Preeja | 72 | 39 | |
| Latheef | 46 | 38 | |
| Stephen | 60 | 85 | Accountancy score more than 50 and Business Studies score more than 80 will be "SELECTED" else "REJECTED" |
| Elizabeth | 75 | 79 | |

Let us see the formula that was given to satisfy the given argument using AND function in the Fig 2.28.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Name | Scores | | Result | Formula Used |
| 2 | | Accountancy | Business studies | | |
| 3 | Reshmi | 50 | 45 | TRUE | =AND(B3>=50,C3>=40) |
| 4 | Manohar | 35 | 60 | FALSE | =AND(B4>=50,C4>=40) |
| 5 | Preeja | 72 | 39 | FALSE | =AND(B3>=50,C3>=40) |
| 6 | Latheef | 46 | 38 | FALSE | =AND(B6>=50,C6>=40) |
| 7 | Stephen | 60 | 85 | SELECTED | =IF(AND(B7>50,C7>80),"SELECTED","REJECTED") |
| 8 | Elizabeth | 75 | 79 | REJECTED | =IF(AND(B8>50,C8>80),"SELECTED","REJECTED") |

Fig. 2. 28 Example of AND and IF function

- **OR**

OR function is used to compare two values or statements. The difference between OR and AND is that OR will return 'TRUE' if at least one argument is correct and 'FALSE' if all the arguments are wrong. But in AND all the arguments must be correct for giving a 'TRUE' value.

Syntax : =OR(LogicalValue1,LogicalValue2, ....LogicalValue30)

Consider the given example:

The scores of students in two subjects Accountancy and Business Studies are listed below. Ascertain how the arguments given are met or not using OR function.

### Score sheet of students

| Name | Scores | | Argument |
|---|---|---|---|
| | Accountancy | Business studies | |
| Priya | 50 | 45 | Accountancy score more than 50 OR Business Studies score more than 40 |
| Smitha | 35 | 60 | |
| Preeja | 72 | 39 | |
| Lijiya | 46 | 38 | |
| Reena | 60 | 85 | Accountancy score more than 80 OR Business Studies score more than 80 will be "SELECTED" else "REJECTED" |
| Shyma | 87 | 57 | |
| Vineetha | 82 | 81 | |
| Elizabeth | 75 | 79 | |

Observe the table given to see the formula used and the output generated:

| Name | Scores | | Result | Formula Used | Argument TRUE or FALSE |
|---|---|---|---|---|---|
| | Accountancy | Business studies | | | |
| Priya | 50 | 45 | TRUE | =OR(B3>=50,C3>=40) | All arguments are True |
| Smitha | 35 | 60 | TRUE | =OR(B4>=50,C4>=40) | One Argument is True |
| Preeja | 72 | 39 | TRUE | =OR(B3>=50,C3>=40) | One Argument is True |
| Lijiya | 46 | 38 | FALSE | =OR(B6>=50,C6>=40) | All arguments are False |
| Reena | 60 | 85 | SELECTED | =IF(OR(B7>80,C7>80),"SELECTED","REJECTED") | One Argument is True |
| Shyma | 87 | 57 | SELECTED | =IF(OR(B8>80,C8>80),"SELECTED","REJECTED") | One Argument is True |
| Vineetha | 82 | 81 | SELECTED | =IF(OR(B9>80,C9>80),"SELECTED","REJECTED") | All arguments are True |
| Elizabeth | 75 | 79 | REJECTED | =IF(OR(B10>80,C10>80),"SELECTED","REJECTED") | All arguments are False |

### 2.6.4 Mathematical functions

Calc provides several mathematical functions which help us to expedite analysis. Here you will get a chance to practice using some of these functions more commonly needed in spreadsheets for business applications. They are SUM and ROUND.

- **SUM**

This function is used to get the sum of the given numbers, cells or range of cells. This was already discussed in the beginning of this unit.

Syntax: =SUM(number1, number2,..........)

=SUM(cell1, cell2,.......................)

=SUM(Range1,Range2,................)

- **SUMIF**

This function is little different from the SUM function. It only sums its values when a particular condition or criteria is met. That is, SUMIF will add only those figures from a particular range which satisfies the conditions.

Syntax: **=SUMIF(range,"criteria", sum_range)**

Where,

**Range** means the range of cells to which the criteria are to be applied.

**Criteria** are the condition to be fulfilled for totalling cells.

**Sum-range** means the range of cells considered for totalling which matches the given criteria. If this parameter is not indicated, the values found in the range are summed.

Let us see an example:

The table given shows the values of Assets owned by M/s. Santhi Associates and its depreciation for the year ending 31st December 2017.

Compute the following by using SUMIF Function.

| | A | B | C |
|---|---|---|---|
| 1 | Name of Asset | Value of Asset ₹ | Depreciation ₹ |
| 2 | Land | 750000 | 90000 |
| 3 | Buildings | 300000 | 45000 |
| 4 | Plant | 500000 | 60000 |
| 5 | Machinery | 250000 | 30000 |
| 6 | Furniture | 100000 | 20000 |

(a) Total depreciation of those assets which is more than ₹ 4,00,000

(b) Total depreciation of those assets which is less than ₹ 3,50,000

(c) Total depreciation of those assets which is exactly ₹ 3,00,000

(d) Total value of Assets which is less than or equal to ₹ 3,00,000

(e) Total value of Assets which is more than or equal to ₹ 5,00,000

The following table will help you to understand how the formula will work in different situations.

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Name of Asset | Value of Asset ₹ | Depreciation ₹ | Cases | RESULT | Function Used |
| 2 | Land | 750000 | 90000 | Total depreciation of assets which is more than Rs 4,00,000 | 150000 | =SUMIF(B2:B6,">400000",C2:C6) |
| 3 | Buildings | 300000 | 45000 | Total depreciation of assets which is less than Rs 3,50,000 | 95000 | =SUMIF(B2:B6,"<350000",C2:C6) |
| 4 | Plant | 500000 | 60000 | Total depreciation of assets which is exactly Rs 3,00,000 | 45000 | =SUMIF(B2:B6,"=300000",C2:C6) |
| 5 | Machinery | 250000 | 30000 | Total value of Assets which is less than or equal to Rs 3,00,000 | 650000 | =SUMIF(B2:B6,"<=300000") |
| 6 | Furniture | 100000 | 20000 | Total value of Assets which is more than or equal to Rs 5,00,000 | 1250000 | =SUMIF(B2:B6,">=500000") |

- **ROUND**

Often while carrying out division of numbers, calculating interest, preparing pay roll etc., the end result may be in fraction. Calc provides 'ROUND' function to round-off a number to a certain number of decimal places.

Syntax: =ROUND(Number,Count)

Where;

Number - Number to round to specified number of digits

Count - It specifies the number of digits to round the number

Suppose, number 128.758 is given and is asked to round it to 2 decimal places, doing this manually is very easy. But if huge volume of data is given and you need to round off some digits then this spreadsheet application comes in handy. Let us see how this can be done:

=ROUND(128.758,2) and the result will be 128.76

In the above example the 'Count' is given as 2. So the given number is rounded to the second decimal place. The table will give you an idea about the effect on the results, if the count is changed to 0,1, -1, -2 etc.

**Examples of Round Function**

| FORMULA | DESCRIPTION | RESULT |
|---|---|---|
| =ROUND(25431.2572,2) | Rounds 25431.2572 to 2 decimal place | 25431.26 |
| =ROUND(25431.2572,1) | Rounds 25431.2572 to 1 decimal place | 25431.3 |
| =ROUND(45431.725,0) | Rounds 45431.725 to 0 decimal place to nearest integer | 45432 |
| =ROUND(25431.2572,-1) | Rounds 25431.2572 to nearest 10 (left of the decimal) | 25430 |
| =ROUND(25431.2572,-2) | Rounds 25431.2572 to nearest 100 (left of the decimal) | 25400 |

- If count is greater than zero, then number is rounded to the specified number of decimal places.
- If count is zero, then number is rounded to the nearest integer.
- If count is less than zero, then number is rounded to the left of the decimal point.

- **ROUNDUP**

This function is similar to ROUND function. This function rounds a number up away from zero, without considering the value next to the rounding digit.

Syntax: =ROUNDUP(number,count)

The following example given in the table put you in better position to understand the ROUNDUP function.

**Examples of Roundup function**

| FORMULA | DESCRIPTION | RESULT |
|---|---|---|
| =ROUNDUP(45321.7354,2) | Rounds 45321.7354 UP to 2 decimal place | 45321.74 |
| =ROUNDUP(45321.7354,1) | Rounds 45321.7354 UP to 1 decimal place | 45321.8 |
| =ROUNDUP(45321.7354,0) | Rounds 45321.7354 UP to 0 decimal place | 45322 |
| =ROUNDUP(45321.7354,-1) | Rounds 45321.7354 UP to 1 decimal place to the left of the decimal (Rounds UP to the next 10) | 45330 |
| =ROUNDUP(45321.7354,-2) | Rounds 45321.7354 UP to 2 decimal place to the left of the decimal (Rounds UP to the next 100) | 45400 |

- **ROUNDDOWN**

This function does the opposite of ROUNDUP. It rounds a number down towards zero.

Syntax: =ROUNDDOWN(Number,Count)

The listed examples generate an idea on ROUNDDOWN function.

**Examples of Rounddown function**

| FORMULA | DESCRIPTION | RESULT |
|---|---|---|
| =ROUNDDOWN(45321.7354,2) | Rounds 45321.7354 down to 2 decimal place | 45321.73 |
| =ROUNDDOWN(45321.7354,1) | Rounds 45321.7354 down to 1 decimal place | 45321.7 |
| =ROUNDDOWN(45321.7354,0) | Rounds 45321.7354 down to 0 decimal place | 45321 |
| =ROUNDDOWN(45321.7354,-1) | Rounds 45321.7354 down to 1 decimal place to the left of the decimal (Rounds down to the next 10) | 45320 |
| =ROUNDDOWN(45321.7354,-2) | Rounds 45321.7354 down to 2 decimal place to the left of the decimal (Rounds down to the next 100) | 45300 |

## 2.6.5 Text Functions

Text functions are used for creating or modifying the data entered in cells to a required text format to same cell or another cell. Commonly used text functions are TEXT and CONCATENATE.

- **TEXT**

You have already learnt about different types of data to be inserted in a cell. This can be number or text. Is it possible for us to convert a number into a text format in Calc?

TEXT converts a number or numerical value into text according to a user given format. This function is useful in situations where we want to display numbers in a more readable format, or want to combine numbers with text or symbols.

Syntax : TEXT(Number,Format)

Where,

Number - numerical value to be converted.

Format - is the text, which defines the format.

Consider the given example :

Cell A2 contains the number 123.45. How can we format this number by adding currency symbol " ₹ " and convert using TEXT function. (See Fig.2.29)

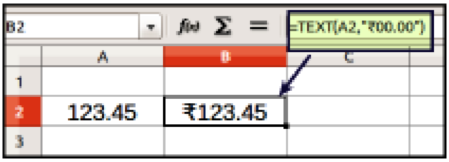



Fig. 2.29 Text function

Examples of TEXT Function on various occasions are given in the following table:

| Sl No | Values | Text Function | Result |
|---|---|---|---|
| 1 | 123.45 | =TEXT(A1,"?000.00") | ₹123.45 |
| 2 | 123.34567 | =TEXT(B24,"?###.##") | ₹123.35 |
| 3 | 1122017 | =TEXT(B25,"00-00-0000") | 01/12/2017 |
| 4 | | =TEXT(TODAY(),"DD/MM/YYYY") | 27/11/2017 |
| 5 | | =TEXT(TODAY(),"DD") | 27 |
| 6 | | =TEXT(TODAY(),"DDDD") | Monday |
| 7 | | =TEXT(TODAY(),"MM") | 11 |
| 8 | | =TEXT(TODAY(),"MMMM") | November |
| 9 | | =TEXT(TODAY(),"YYYY") | 2017 |
| 10 | | =TEXT(NOW(),"H:MM AM/PM") | 9:40PM |
| 11 | 0.285 | =TEXT(A3,"0.0%") | 28.5% |
| 12 | 4567549812 | =TEXT(A4,"00 00 00 00 00") | 45 67 54 98 12 |

- **CONCATENATE**

This function combines several text strings of different cells into one string. A maximum of 30 passages can be combined into one string. The text items can be text strings, numbers, or single-cell references. Space between strings are given in inverted comma (“ ”).

Syntax : = CONCATENATE("Text1","Text2", ......."Text30")

Example : The address slip of an employee from his personal details by using concatenate function is narrated below.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | **Name** | **House Name** | **Post Office** | **District** |
| 2 | DILEEP.S | Rose Villa | Cheriyanad | Alappuzha |

The function to join the different text items of different cells into one cell is as follows.

=CONCATENATE(A2," ",B2," ",C2," ",D2). See figure 2.30.

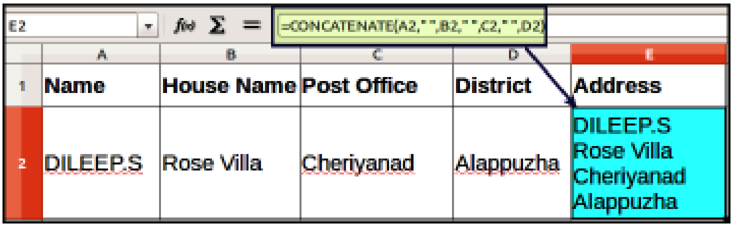



Fig. 2.30 - Concatenate function

## *Let's assess*

1. *=COUNT(45,24,Ab,55,72,Ab,47) returns ________*
2. *COUNTBLANK function count the number of ________ cells in the given range.*
3. *The function used to combine several text strings in different cells into one string is _____.*
4. *Assume cell contains values - A1 = 10000, A2 =15000, A3 = 12000, A4 = 14000. What is the result of*

   *SUMIF statement: =SUMIF (A1:A4, "<14000")*

   *a. 15000 b. 24000 c. 27000 d. 22000*
5. *What is the result of the following? =ROUNDUP(45321.4354,0)*

   *a. 45322 b. 45321 c. 45321.4 d. 45320*
6. *The function which counts the number of cells of any value.*

   *a. COUNT b. COUNTA c. COUNTBLANK d. COUNTIF*

### 2.6.6 Spreadsheet Functions

Calc also provides the following functions -

- **LOOKUP**

Suppose a list containing the names and basic pay of 100 employees of a firm is given in a worksheet. Can you find out the basic pay of a particular employee with in a flash?

LOOKUP function is used for searching certain values from a particular table. It is used when we need to look in a single row or column range (known as a vector or from an array) and find a value from the same position in a second row or column.

If LOOKUP cannot find the search criterion, it matches the largest value in the search vector that is less than or equal to the search criterion.

Lookup function has two syntax forms. They are :

i) Vector form and ii) Array form.

- **LOOKUP (Vector form)**

Syntax

=LOOKUP (SearchCriterion, SearchVector, ResultVector)

Where,

**Search Criterion :** The value to be searched for; entered either directly or as a reference. Search criterion can be a number, text or a logical value.

**Search Vector :** The single-row or single-column area to be searched. The search vector for the LOOKUP must be sorted in ascending order for getting proper results.

**Result Vector :** The single-row or single-column range from which the result of the function is taken.

Go through the example given below :

Details of employees and their basic pay are given in the following table.

(a) Find the name of employee with employee code 2004

(b) Find the basic pay of employee with employee code 2008

(c) Look up the name of employee with employee code 2010

(d) Look up the name of employee with employee code 2000

| Employee Number | Employee Name | Basic Pay |
|---|---|---|
| 2001 | Stephen | 45000 |
| 2002 | Vivek | 64000 |
| 2003 | Deepa | 43000 |
| 2004 | Vincent | 56000 |
| 2005 | Hameed | 51500 |
| 2006 | Anupama | 43000 |
| 2007 | Haridas | 53000 |
| 2008 | Krishnapriya | 62500 |

The excerpts of worksheet, details the LOOKUP function.

| Employee Number | Employee Name | Basic Pay | Lookup result | Function | Q No. |
|---|---|---|---|---|---|
| 2001 | Stephen | 45000 | Vincent | =LOOKUP(2004,A2:A9,B2:B9) | (a) |
| 2002 | Vivek | 64000 | 62500 | =LOOKUP(2008,A2:A9,C2:C9) | (b) |
| 2003 | Deepa | 43000 | Krishnapriya | =LOOKUP(2010,A2:A9,B2:B9) | (c) |
| 2004 | Vincent | 56000 | #N/A | = LOOKUP(2000,A2:A9,B2:B9) | (d) |
| 2005 | Hameed | 51500 | | | |
| 2006 | Anupama | 43000 | | | |
| 2007 | Haridas | 53000 | | | |
| 2008 | Krishnapriya | 62500 | | | |

(Looks up 2000 in column A and finds it is less than the smallest value in column A and the result generated is #N/A)

- **LOOKUP (Array form)**

Syntax :

=LOOKUP(lookup_value, array)

Example:

Name of the students, their scores and grades are given.

| Name | Scores | Grade |
|---|---|---|
| Priya | 52 | C+ |
| Smitha | 35 | D+ |
| Preeja | 72 | B+ |
| Lijiya | 46 | C |
| Reena | 61 | B |
| Shyma | 91 | A+ |
| Vineetha | 82 | A |
| Elizabeth | 75 | B+ |

**Let's know more ...**

*What is an Array?*

*An array is a linked range of cells on a spreadsheet containing values. A square range of 3 rows and 3 columns is a 3×3 array:*

| | A | B | C |
|---|---|---|---|
| 1 | 43 | 12 | 32 |
| 2 | 51 | 62 | 75 |
| 3 | 47 | 81 | 39 |

*The smallest possible array is a 1×2 or 2×1 array with two adjacent cells.*

(a) Find the grade of Preeja using LOOKUP function.

(b) Find the score of Vineetha using LOOKUP function

(c) Find the Grade of Score 91 using LOOKUP function

You can arrive at the result shown below using the LOOKUP function. (See Fig. 2.31)

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Name | Scores | Grade | Result | Function Used |
| 2 | Priya | 52 | C+ | B+ | LOOKUP("Preeja",A2:C9) |
| 3 | Smitha | 35 | D+ | | |
| 4 | Preeja | 72 | B+ | 82 | LOOKUP("Vineetha",A2:B9) |
| 5 | Lijiya | 46 | C | | |
| 6 | Reena | 61 | B | A+ | LOOKUP(B7,A2:C9) |
| 7 | Shyma | 91 | A+ | | |
| 8 | Vineetha | 82 | A | | |
| 9 | Elizabeth | 75 | B+ | | |

Fig. 2.31 Result of Lookup function

Alternatively, we can arrive at the same result with the help of function wizard.

Select the category as 'Spreadsheet' and function as 'LOOKUP' from the left pane of the wizard.

Enter the values in the following fields.

a. Search Criterion - "Preeja"
b. Search Vector - A2:C9

Here Array A2:C9 has 3 columns and 9 rows. Automatically formula will be displayed in the formula field and its function result will come up in the result field. See Fig.2.32.

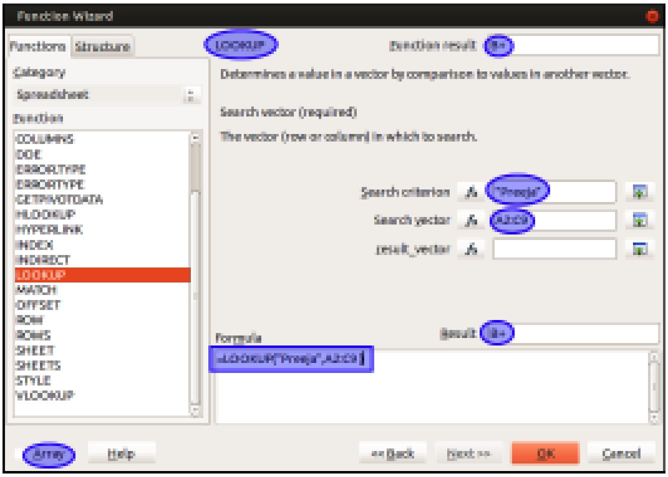



Fig. 2.32 Lookup Function Wizard

*The array form of LOOKUP is very similar to the HLOOKUP and VLOOKUP functions. The difference is that HLOOKUP searches for the value of lookup_value in the first row, VLOOKUP searches in the first column, and LOOKUP searches according to the Dimensions of array.*

- **VLOOKUP**

VLOOKUP stands for Vertical LOOKUP. This will simply look for something in a range of cells and returns something that is in the same row.

VLOOKUP searches the first column (leftmost column) of a block of data and return the value from another column in the same row. The column containing search criterion must be in ascending order.

SYNTAX : =VLOOKUP(SearchCriterion,Array,Index,SortOrder)

Where,

SearchCriterion - The value you are looking for.

Array - Where you are looking.

Index - The column number in the table (array) from which matching value to be returned. (Index no.1 for column A, 2 for Column B, 3 for Column C and so on...)

Sort order - Precise or approximate values will be returned. Give '0' for Precise value and '1' stands for approximate value.

*Enter the Boolean value FALSE or 0 (Zero) if the first column is not sorted in ascending order. In unsorted lists, the search value must be matched exactly. Otherwise the function will return this message:*
*#N/A (Error: Value Not Available).*

*Enter the Boolean value TRUE or 1 (One) if the first column is sorted in ascending order. Sorted columns can be searched much faster and the function always returns a value, even if the search value was not matched exactly, if it is between the lowest and highest value of the sorted list.*

Let us do some practice. The details of some employees in an organisation are given in the following table.

| Employee No | Name | Date of Birth | Designation | Basic Pay |
|---|---|---|---|---|
| 1001 | Priyanka | 14-02-1988 | Manager | 50000 |
| 1002 | Suhail | 15-08-1986 | Asst. Manager | 38000 |
| 1003 | Preeja | 16-04-1979 | Cashier | 25000 |
| 1004 | Malavika | 25-07-1984 | Accountant | 46000 |
| 1006 | Midhun | 18-02-1983 | Clerk | 18000 |
| 1007 | Shyma | 19-02-1990 | Clerk | 20000 |
| 1008 | Vineetha | 20-02-1987 | Clerk | 16000 |
| 1010 | Elizabeth | 21-02-1988 | Peon | 14000 |

You are required to search the following :

(a) Name of employee having employee code 1007

(b) Date of birth of employee whose code is 1004

(c) Basic pay of employee number 1009 if data is not in ascending order.

(d) Basic pay of employee number 1009 if data is given in ascending order.

(e) Basic pay of employee number 1001.

(f) Name of employee number 1000.

(g) Name of employee number 1001.

(h) Designation of employee number 1001.

The following steps are required for getting the lookup values

1. Enter the given data in the same format from cell A1 to E9 as shown below.
2. Select Cells where the result is required and enter VLOOKUP Function.
   Relevant formulae are given in column F (See figure 2.33)

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Employee No | Name | Date of Birth | Designation | Basic | Function Used | Result |
| 2 | 1001 | Priyanka | 14/02/1988 | Manager | 50000 | =VLOOKUP(1007,A2:E9,2,0) | Shyma |
| 3 | 1002 | Suhail | 15/08/1986 | Asst. Manager | 38000 | =VLOOKUP(1004,A2:E9,3,0) | 25/07/1984 |
| 4 | 1003 | Preeja | 16/04/1979 | Cashier | 25000 | =VLOOKUP(1009,A2:E9,5,0) | #N/A |
| 5 | 1004 | Malavika | 25/07/1984 | Accountant | 46000 | =VLOOKUP(1009,A2:E9,5,1) | 16000 |
| 6 | 1006 | Midhun | 18/02/1983 | Clerk | 18000 | =VLOOKUP(1001,A2:E9,5) | 50000 |
| 7 | 1007 | Shyma | 19/02/1990 | Clerk | 20000 | =VLOOKUP(1000,A2:E9,2,0) | #N/A |
| 8 | 1008 | Vineetha | 20/02/1987 | Clerk | 16000 | =VLOOKUP(1001,A2:E9,2,0) | Priyanka |
| 9 | 1010 | Elizabeth | 21/02/1988 | Peon | 14000 | =VLOOKUP(1001,A2:E9,4,0) | Manager |

Fig. 2.33 Results of VLOOKUP function

## Try Yourself

The details of books available in a school library are given below :

| Book No | Name | Author | Category | Price |
|---|---|---|---|---|
| 1001 | Veenapoovu | Kumaranasan | Poem | 50 |
| 1007 | Randamoozham | M.T Vasudevan Nair | Novel | 250 |
| 1004 | My Experiments with Truth | M K Gandhi | Autobiography | 100 |
| 1008 | Uppu | ONV Kurup | Poem | 120 |
| 1005 | Othello | Shakespeare | Drama | 200 |

Arrange them in book number order and use VLOOKUP function to:

(a) Search the name of book number 1004.

(b) Search the author of book number 1007.

(c) Search the category of book number 1005.

(d) Search the price of the book number 1008.

- **HLOOKUP**

HLOOKUP stands for horizontal lookup. It searches for values from top to bottom horizontally. This function searches for a value in the first row of an array and returns the corresponding value in a row of the array, named in the Index, in the same column. HLOOKUP supports the same form and arguments as VLOOKUP.

Syntax : HLOOKUP (SearchCriterion,Array,Index,Sorted)

Where,

SearchCriterion - Value searched for in the first row of the array.

Array - The range or range name containing the table of data

Index - The row number in a table_array from which you return corresponding matching value. (Index 1 for Row 1, 2 for Row 2, 3 for Row 3 and so on...)

Sorted - Indicates whether to find an exact match. True or 1 gives closest match and False or 0 returns exact match.

Example:

The number of units of each home appliances sold by Marvel Trade Links during the last four years are given:

| Products | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|
| Smart TV | 513 | 675 | 674 | 715 |
| Smart Phones | 1567 | 1659 | 1589 | 2004 |
| Washing Machine | 420 | 365 | 312 | 345 |
| Fridges | 640 | 574 | 543 | 366 |
| Electric Oven | 215 | 317 | 239 | 284 |

You are required to find the following by using HLOOKUP function.

(a) Number of smart TV sold during the year 2014

(b) Number of Fridges sold during the year 2015

(c) Name of the product in the fourth row.

The table given below shows how to deal with HLOOKUP (See figure 2.34).

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Products | 2014 | 2015 | 2016 | 2017 | Formula Used | Result |
| 2 | Smart TV | 513 | 675 | 674 | 715 | =HLOOKUP(B1,A1:E6,2) | 513 |
| 3 | Smart Phones | 1567 | 1659 | 1589 | 2004 | =HLOOKUP(2015,A1:E6,5) | 574 |
| 4 | Washing Machine | 420 | 365 | 312 | 345 | =HLOOKUP(A1,A1:E6,4) | Washing Machine |
| 5 | Fridges | 640 | 574 | 543 | 366 | | |
| 6 | Electric Oven | 215 | 317 | 239 | 284 | | |

Fig. 2.34 Result of HLOOKUP function

- **ROWS**

The function returns the row number of a reference or array. It also gives back the number of rows when this function is used on a range of cells.

Syntax : =ROWS(Array)



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'Array' - is the reference or named area whose total number of rows is to be determined

Example - =ROWS(C1:H4). See Fig.2.35.

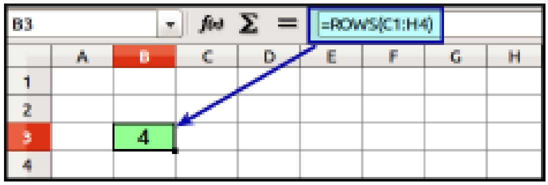



Fig. 2.35 - Example of ROWS function

- **COLUMNS**

This function returns the number of columns in an array or reference

Syntax : =COLUMNS(array)

'array' is the reference to a cell range whose total number of columns is to be found.

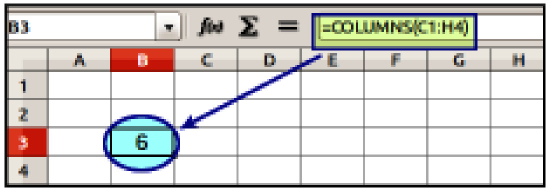



Fig. 2.36 - Example of COLUMNS function

Example : =COLUMNS(C1:H4). See Fig.2.36.

### *Let's assess*

1. *IF function comes under ................*
   *(a) Logical (b) Statistical (c) Text Manipulation (d) Spreadsheet*
2. *AND function return True if ............. ( all / any) arguments are true.*
3. *A function inside another function is called ________*
   *(a) Nested Function (b) Round function*
   *(c) Sum function (d) Text function*
4. *Which function is used while combining more than one test condition and the result will be true if any of the condition is True?*
5. *Which function returns True if all the conditions are true?*
6. *Find the Odd one out - (a) AND (b) OR (c) IF (d) SUM.*
7. *The function which returns the number of rows in a reference or array is _______*

## 2.6.7 Financial Functions

Imagine that you need some cash urgently and approach a bank for a loan of ₹ 2,00,000. The bank provides the loan for 3 years with a fixed rate of interest @ 10% per annum.

- How much do you have to pay back per month?
- Suppose, if the bank enhances the interest rate to 12%, what increase will have to be made in the EMI?

Such calculations are quite difficult to be carried out manually. Calc offers lot of financial functions to deal with such situations easily. Spreadsheet helps to perform many common financial calculations for finding out accrued interest, monthly payment of an annuity etc. very easily. Let us discuss some of the common financial functions.

- **ACCRINT**

You know what accrued interest is. Here the spreadsheet has a built-in function - ACCRINT to calculate interest accrued on securities and bonds which carries periodic interest.

ACCRINT is the abbreviation used for accrued interest.

Accrued interest is interest due but not received / paid. Companies may pay interest on debentures or bonds periodically (quarterly, half yearly or yearly). If holder of a security sells it before the next interest due date, the buyer has to pay its market value plus interest earned up to the settlement date. In such cases the calculation of interest is very difficult. Spreadsheet helps to calculate such interest easily.

**Syntax :** =ACCRINT(Issue, First interest, Settlement, Rate, Par, Frequency, Basis)

Where,

Issue - The date on which security was issued.

First Interest - The date that the first interest will be paid.

Settlement - The settlement date of the security. (ie. sold or purchased)

Rate - Annual interest rate of security (coupon interest rate)

Par - Par value of the security.

Frequency - Number of interest payments per year
(1 for annual , 2 for half-yearly and 4 for quarterly).

Basis - (optional) The type of day count. (If basis not given it is automatically counted as 0)

| Basis | Calculation (Type of day count) |
|---|---|
| 0 or missing | US method (NASD), 12 months of 30 days each |
| 1 | Exact number of days in months, exact number of days in year |
| 2 | Exact number of days in month, year has 360 days |
| 3 | Exact number of days in month, year has 365 days |
| 4 | European method, 12 months of 30 days each |

*Consider the following example:*

Mr. Anoop is holding 10% Debentures of M/s Hi- Tech Ltd worth ₹ 1,00,000 issued on 01/04/2016. The interest due every half-year and first interest due on 30/09/2016. Anoop sold this debentures to Mr. Shafeek on 01/07/2016. Calculate the amount of interest accrued using ACCRINT function.

In this case,

Issue ( issue date of the security.) - 01/04/2016

First Interest (first interest date of the security) - 30/09/2016

Settlement date on which the security is traded - 01/07/2016

Rate (annual interest rate) - 10%

Par (par value of the security) - 1,00,000

Frequency (number of interest payments per year) - 2

Basis (type of day count) - 0

This can be worked out in two methods.

**Method 1** : Select Cell A1 and enter the ACCRINT function in that cell

=ACCRINT("01/04/2016","30/09/2016","01/07/2016", 10%,100000,2,0) gives a result of ₹2500.

The amount of interest payable by Shafeek to Anoop along with the value of debentures is ₹2,500.

(ie, 1,00,000 $\times \frac{10}{100} \times \frac{3}{12}$ = 2,500)

**Method 2** : Enter the above values from Cell B1 to B7 in the order shown in syntax. Select Cell B8 and use function wizard to enter the formula =ACCRINT(B1,B2,B3,B4,B5,B6,B7) (See Fig. 2.37)

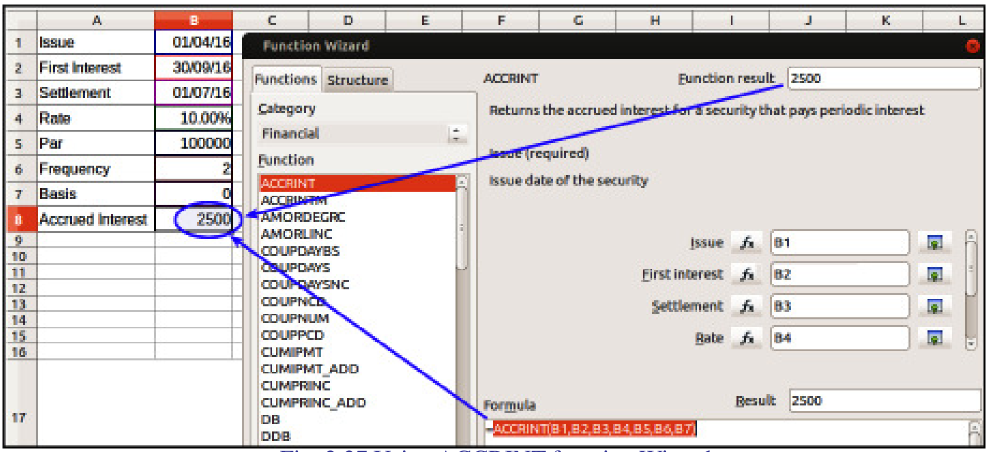



Fig. 2.37 Using ACCRINT function Wizard

- **RATE**

Think that you have taken the risk of investing ₹ 5,00,000 and will receive ₹5,000 per month for the next 10 years . What is the rate of return for the above investment?

The RATE function is primarily used to evaluate the rate of return on investment. It help us to calculate the rate of interest on a loan taken form bank or other financial institution or the rate of return on an investment, over a given period of time.

Syntax : =RATE(NPer,Pmt,PV,FV,Type,Guess)

Where,

NPer - Total number of payment periods in an annuity. (payment period).

Pmt - Fixed amount paid during each period. Given as minus figure

- (PMT includes principal and interest but no other fees or taxes. If Pmt is omitted then include the fv as argument.)

PV - Present value of loan/investment

FV - (optional) Future value of the loan / investment at the end of Nper payments. If omitted, FV takes on the default value being 0 (Zero)

Type - (optional) is the due date of the periodic payment, either at the beginning or at the end of a period.

The type argument can have the value 0 or 1 . Zero is used when the payment is made at the end of the period and '1' is used if the payment is made at the beginning of the period.

Guess - (optional) determines the estimated value of the interest with iterative calculation.

*In the LibreOffice Calc functions, parameters marked as "optional" can be left out only when no parameter follows. For example, in a function with four parameters, and last two parameters are marked as "optional". Here we can leave out parameter 3 and 4. Parameter 4 can also be omitted but we cannot leave out parameter 3 alone.*

Consider the following example:

Sukanya traders took a loan of ₹ 5,00,000 from Canara Bank for a period of 5 years and agreed to repay ₹ 11,500 at the end of each month.

(a) Compute the rate of interest using RATE function. Also calculate the Annual interest.

(b) Calculate the rate of interest if the repayment is made at the beginning of each month.

In this case,

(a) Nper = 60 (5 x 12)
Pmt = -11500 ( Minus is given to denote repayment)
PV = 5,00,000
FV = 0
Type = 0 (payment at the end of each month)
Guess = (Not required)

(b) As compared to option (a) above the only change lies in the parameter 'Type' to '1' since the payment is made at the beginning of each month.

Enter the values from cells C1 to C6 and D1 to D6 as shown in figure 2.38. Then type the formula in cell C7 as = RATE (C1, C2, C3, C4, C5, C6) to get the monthly interest rate. For getting the annual interest rate use the formula in C8 as = C7 * 12.

Copy and paste the formula from cells D7 to D8 for getting result of option (b). You can also use the function wizard for the RATE function.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Nper | Period in months (5x12) | 60 | 60 |
| 2 | Pmt | Monthly repayment must by given as negative | -11500 | -11500 |
| 3 | PV | Present value of Loan | 500000 | 500000 |
| 4 | FV | future value of the loan | 0 | 0 |
| 5 | Type | Payment made at the end / beginning of the period | 0 | 1 |
| 6 | Guess | Not needed | | |
| 7 | | Rate of interest | 1.12% | 1.17% |
| 8 | | Annual interest rate | 13.48% | 14.00% |

=RATE(C1,C2,C3,C4,C5,C6)    =C7*12

Fig. 2.38 Result of Rate Function

*To set the cell format to percent (if necessary): Select the Cells → Format → Cells → Numbers → Percent*

## Try Yourself

Alankar Ltd took a loan of ₹10,00,000 from SBI for a period of 10 years and agreed to repay ₹20,000 at the beginning of each month.

(a) Compute the rate of interest using RATE Function. Calculate the Annual interest also.

(b) Compute the rate of interest assuming that after the payment of ₹20,000 per month at the end of every month for a period of 10 years, the remaining balance will be ₹1,00,000.

- **CUMIPMT**

CUMIPMT function is used to calculate the cumulative interest payments. This function returns the cumulative interest on a loan or investment, based on a constant interest rate between start period and end period.

**Syntax:**=CUMIPMT(Rate,NPer,PV,S,E,Type)

Where,

| | | |
|---|---|---|
| Rate | - | Periodic interest rate. (if annual rate is given, find monthly rate) |
| NPer | - | Length of the loan in months (if given in years to be converted into months) |
| PV | - | Present value of loan/investment |
| S | - | Start period. (For 1st year -1, 2nd Year -13, 3rd year - 25, 4th year - 37 and so on ....) |
| E | - | Last period. (For 1st year -12, 2nd Year - 24, 3rd year - 36 4th year - 48 and so on ....) |
| Type | - | Due date of the payment, either at the beginning or at the end of a period. This can be 0 or 1. Zero is used when the payment is due at the end of the period. 1 is for payment due at beginning of the period. |

### Let us illustrate :

Mrs. Manju availed a loan of ₹ 50000 from Punjab National Bank for a period of 3 years at a yearly interest rate of 8.5%.

1. Compute the following assuming that the payment is made at the end of each period.
   (a) Total interest paid for the first year
   (b) Total interest paid for the second year
   (c) Total interest paid for the first 2 year
   (d) Total interest paid for the third year
   (e) Total interest paid for all the 3 years
2. Also compute the following assuming that the payment is made at the beginning of each period.
   (i) Total interest paid for the first six months
   (ii) Total interest paid for the last 30 months
   (iii) Total interest paid for the entire period of 36 months

The steps to calculate cumulative interest using CUMIPMT function is as follows:

Enter the data as shown in figure 2.39, from cell A2 to I8.

*Rate (8.5% per annum, hence monthly rate) =.007 (8.5%/12)

Select the cell B9 and enter the formula =CUMIPMT(B3,B4,B5,B6,B7,B8) to calculate the cumulative interest of 1st year. Apply the same function in respective cells to find the remaining year's cumulative interest as shown in Fig. 2.39.

| | A | B | C | D | E | F | G | H | I |
|---|---|---|---|---|---|---|---|---|---|
| 1 | | Year 1 | Year 2 | First 2 years | Year 3 | All 3 years | First 6 Months | Next 30 months | All 36 Months |
| 2 | Annual Rate | 8.50% | 8.50% | 8.50% | 8.50% | 8.50% | 8.50% | 8.50% | 8.50% |
| 3 | Rate (Annual rate /12) | .007 | .007 | .007 | .007 | .007 | .007 | .007 | .007 |
| 4 | Nper | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| 5 | PV | 50000 | 50000 | 50000 | 50000 | 50000 | 50000 | 50000 | 50000 |
| 6 | S | 1 | 13 | 1 | 25 | 1 | 1 | 7 | 1 |
| 7 | E | 12 | 24 | 24 | 36 | 36 | 6 | 36 | 36 |
| 8 | Type | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 |
| 9 | Cumulative Interest paid | -₹3,663.95 | -₹2,313.64 | -₹5,977.59 | -₹843.98 | -₹6,821.57 | -₹1,627.99 | -₹4,793.92 | -₹6,421.91 |

Payment at the end

Payment at the beginning

Total of 6 months + 30 months

Fig. 2.39 Result of CUMIPMT Function

## Try Yourself

Mr. Jayaram took a loan of ₹5,00,000 from Vijaya Bank on 1st Jan 2017 for a period of 4 years at 8% interest per annum. As per agreement, the payment is given at the beginning of each month. Compute the cumulative interest payable at the end of each year and also the total interest of the entire loan period by using CUMIPMT function.

- **PV**

Suppose you win a prize and you are offered ₹50,000 or equal payments of ₹1000 per month for 5 years at an annual interest rate of 8% compounded annually. Which one would you choose?

The PV function can tell you whether you accept the money in lump sum or take this in 60 instalments.

PV function relates to Present Value. It is based on the concept that one rupee earned today is worth more than a rupee received on a future date. If we invest ₹100 today at 10% interest per annum, after one year ₹100 become ₹110 (₹100 principal + ₹10 interest)

Do you think that ₹100 received today is equal to ₹100 received after one year? Answer is evidently "No".

PV function returns the present value of an investment resulting from a series of regular payments. This function is used to calculate the amount of money needed to be invested at a fixed rate today, to receive a specific amount, over a specified number of periods.

Syntax : =PV(Rate,Nper,Pmt,FV,Type)

Where,

Rate - Periodic interest rate. (if annual rate is given, find monthly rate)

NPer - Total number of payment periods in months

Pmt - Fixed amount paid during each period. (Pmt should be given as negative as it is payment)

FV - (optional) Future value, or a cash balance to attain after the last payment is made.

Type - (optional) is the due date of the periodic payment, either at the beginning or at the end of a period.

(The type argument can have the value 0 or 1. '0' is used when the payment is made at the end of the period and '1' for the beginning of the period.)

### Consider the following example:

Amit Gupta opened a Recurring Deposit Scheme paying ₹2500 per month for a period of 4 years with an interest rate of 8% per annum. Calculate the present value by using PV function if :

(a) the payments are made at the end of the month.

(b) the payments are made at the beginning of the month.

(c) amount to be invested to get a future value of ₹1,00,000.

Rate = 8% per annum and instalments are made monthly, hence, the interest rate per month is 8%/12.

Nper = 4 years, hence Nper in months is 48 (ie 4*12)

Pmt = -2500 (Pmt must be negative to get positive PV of future earnings)

Fv = Future value, or a cash balance to attain after the last payment is made. (if Fv is omitted, it is assumed to be 0)

Type = 1 means due at the beginning of a month and Type = 0 (default) means due at the end of the month.

Syntax for (a) =PV(8%/12,48,-2500,0,0) Returns ₹102404.78

Syntax for (b) =PV(8%/12,48,-2500,0,1) Returns ₹103087.48 (See Fig. 2.40)

Syntax for (c) =PV(8%/12,48,0,100000,0)

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | | Payment is made at the end | Payment is made at the beginning | PMT is omitted and Future value given | PMT is omitted and Future value given |
| 2 | Annual Rate | 8.00% | 8.00% | 8.00% | 8.00% |
| 3 | Rate (Annual rate /12) | .007 | .007 | .007 | .007 |
| 4 | Nper | 48 | 48 | 48 | 48 |
| 5 | PMT | -2500 | -2500 | 0 | 0 |
| 6 | FV | 0 | 0 | 100000 | 100000 |
| 7 | Type | 0 | 1 | 0 | 1 |
| 8 | PV | ₹1,02,404.78 | ₹1,03,087.48 | -₹72,692.06 | -₹72,692.06 |

Fig. 2.40 - Result of PV function

- **PMT**

You want to borrow money to buy a car, and you know the principal amount, interest rate and the term of the loan or say you intend to borrow ₹2,00,000 at 10% interest and pay off this loan in 5 years, in such cases PMT function will easily calculate the monthly payment for you.

The PMT function calculates the periodic payment for an annuity assuming equal payments and a constant rate of interest.

PMT refers to payment which has to be paid periodically for a loan or investment. This function helps to calculate the instalment amount including part of principal amount and monthly interest. The amount of instalment is called EMI (Equated Monthly Instalment.). It can be calculated with the help of the PMT function.

Syntax =PMT(Rate,Nper,PV,FV,Type)

Where,

Rate - The periodic interest rate.
(If annual rate is given calculate monthly rate by dividing rate by 12)

NPer - The number of periods over which the loan or investment is to be paid

PV - The present value of loan or investment

FV - (optional) The desired value (future value) to be reached at the end of the periodic payments.

Type - (optional) The due date for the periodic payments.
(Type = 0 for due date at the end of each period
Type =1 for beginning of each period)

Consider the given example:

Calculate the Monthly payment for a Loan of ₹25,000 availed by Mr. Philip from Bank of Baroda @ 8% per annum for a period of 3 years, assuming that :

(a) payment is made at the end of each month.

(b) payment is made at the beginning of each month.

(c) Also calculate EMI, if the repayment is made at the end of each month for a period of 4 years

The following steps are to be followed.

1. Enter the values Rate,Nper,PV,FV and Type as shown in Fig. 2.41.

2. Enter the formula as shown below. (We can also use the function wizard to insert the PMT function in the cell where output is required.)

Syntax for (a) =PMT(8%/12,36,25000,0,0) or =PMT(B2, B3, B4, B5, B6)

Syntax for (b) =PMT(8%/12,36,25000,0,1) or =PMT(C2, C3, C4, C5, C6)

Syntax for (b) =PMT(8%/12,36,25000,0,0) or =PMT(D2, D3, D4, D5, D6)

The result is displayed in figure 2.41.

| | | (a) | (b) | (c) |
|---|---|---|---|---|
| | A | B | C | D |
| 1 | Annual Rate | 8.00% | 8.00% | 8.00% |
| 2 | Rate (Annual rate /12) | .007 | .007 | .007 |
| 3 | Nper | 36 | 36 | 48 |
| 4 | PV | 25000 | 25000 | 25000 |
| 5 | FV | 0 | 0 | 0 |
| 6 | Type | 0 | 1 | 0 |
| 7 | Monthly instalment | -₹783.41 | -₹778.22 | -₹610.32 |

=PMT(B2,B3,B4,B5,B6)

=PMT(C2,C3,C4,C5,C6)

Fig. 2.41 Result of PMT Function

## Try Yourself

Mr. Rejith took a car loan of ₹4,50,000 form Dena Bank at 9 % interest per annum for a period of 7 years. The repayment should be made in equated monthly instalments, payable at the end of each month. Calculate the Monthly instalment using PMT function in LibreOffice Calc.

- **FV**

Suppose, ₹10,00,000 is invested for a period of 5 years at an interest rate of 8% per annum. How much would you get back at the end of the period?

To find an answer you can right away open a worksheet and look for FV function. This function calculates the future value of an investment based on a constant interest rate. You can use FV with either periodic constant payment or on single lump sum payment.

Syntax : =FV(Rate,Nper,Pmt,PV,Type)

Where,

| | | |
|---|---|---|
| Rate | - | Periodic interest rate. |
| NPer | - | Total number of periods (payment period). |
| Pmt | - | The annuity paid regularly per period. |
| PV | - | (optional) Present cash value of an investment. |
| Type | - | (optional) Defines whether the payment is due at the beginning or the end of a period. |

Consider the given example:

Amit Gupta opened a Recurring Deposit Scheme paying ₹ 2500 per month for a period of 4 years with an interest rate of 8% per annum. Calculate the future value of RD by using FV function if :

(a) the payments are made at the end of the month.

(b) the payments are made at the beginning of the month.

(c) Find the future value if the amount invested is ₹ 72692.06 in lump sum instead of monthly instalments with the same interest rate for 4 years.

Figure 2.42 clearly explains the parameters to be given in different cells to arrive at the results:

| | | | | | | |
|---|---|---|---|---|---|---|
| 1 | | | (a) | (b) | (c) | |
| 2 | | A | B | C | D | E |
| 3 | 1 | | Payment is made at the end | Payment is made at the beginning | PMT is omitted and Present value given | PMT is omitted and present value given |
| 4 | 2 | Annual Rate | 8.00% | 8.00% | 8.00% | 8.00% |
| 5 | 3 | Rate (Annual rate /12) | .007 | .007 | .007 | .007 |
| 6 | 4 | Nper | 48 | 48 | 48 | 48 |
| 7 | 5 | PMT | -2500 | 2500 | 0 | 0 |
| 8 | 6 | PV | 0 | 0 | -72692.06 | 72692.06 |
| 9 | 7 | Type | 0 | 1 | 0 | 1 |
| 10 | 8 | FV | ₹1,40,874.79 | -₹1,41,813.95 | ₹1,00,000.00 | -₹1,00,000.00 |

Fig. 2.42 Result of FV Function

## Try Yourself

Mrs. Santhi has a postal life insurance policy, to which she deposits ₹ 750 per month for 5 years. The interest rate is 10% p.a. Calculate the amount she gets at the end using FV function in LibreOffice Calc if :

(a) the payments are made at the end of the month.

(b) the payments are made at the beginning of the month.

- **NPV**

Net present value (NPV) is the present value of an investment's expected cash inflows minus the costs of acquiring the investment.

NPV = (Present value of Cash inflows from investment) - (cash outflows or costs of investment or project).

NPV function returns the present value of a series of periodic cash inflows at a discount rate. To get the net present value, subtract the cost of the project (the initial cash outflow) from the present value of future cash inflows.

Syntax : = **NPV(Rate,Value1, Value2, Value3.......)**

Where,

| | | |
|---|---|---|
| Rate | : | The discount rate for a period. |
| Value1,Value2, Value3.... | : | Cash inflows (limited up to 30 values) |

Consider the following example :

Calculate the present value of annual cash inflows of ₹10, ₹20 and ₹30 with a discount rate of 8.75%. If the initial investment is ₹40, what will be the net present value of future cash inflows:

=NPV(8.75%, 10,20,30) returns ₹49.43

The net present value is the returned value (₹49.43) minus the initial costs of ₹40. Therefore, the net present value is ₹9.43 as shown below:

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Initial investment / Cash outflow | Rate | Cash inflow year 1 | Cash inflow year 2 | Cash inflow year 3 | Present value of future cash inflows | NPV |
| 2 | 40 | 8.75% | 10 | 20 | 30 | ₹49.43 | ₹9.43 |

Let us consider another example

Manav traders think of buying the business of Lavanya stores. It takes a careful look at Lavanya stores projections for the next 5 years. It discounts those projected cash inflows back to the present value using its weighted average cost of capital at 6%.

Cost of acquiring Lavanya Stores : ₹5,00,000

Cash inflows from Lavanya stores is

Year 1: ₹1,70,000; Year 2: ₹1,30,000; Year 3: ₹1,25,000;

Year 4: ₹1,00,000; Year 5: ₹75,000

(a) Calculate the present value of cash inflows and net present value of above proposal.

(b) Calculate NPV if cost capital is 8%.

(c) Calculate NPV if the initial investment is ₹ 5,50,000 and cost of capital is 6%

(d) Calculate NPV if the initial investment is ₹ 5,50,000 and cost of capital is 8%

(e) Evaluate the above proposals based on the calculated NPV.

Steps to calculate the present value of future cash inflows and NPV is illustrated below:

Step 1 : Enter the details from cell A3 to F9 as shown in figure 2.43

Step 2 : Enter the formula =NPV(C4,C5,C6,C7,C8,C9) in cell C10.

Step 3 : Enter the formula = NPV(C4,C5,C6,C7,C8,C9) -C3 in cell C11.

Step 4 : Select Cell C10 and drag and fill cells D10 to F10.

Step 5 : Select Cell C11 and drag and fill Cells D11 to F11.

The final output will be displayed as shown in figure 2.43.

| 1 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 2 | | | (a) | (b) | (c) | (d) |
| 3 | Initial investment / Cash outflow | | 500000 | 500000 | 550000 | 550000 |
| 4 | Cost of capital / Discount rate | Rate | 6.00% | 8.00% | 6.00% | 8.00% |
| 5 | Cash inflow - year 1 | Value1 | 1,70,000 | 1,70,000 | 1,70,000 | 2,00,000 |
| 6 | Cash inflow - year 2 | Value2 | 130000 | 130000 | 130000 | 150000 |
| 7 | Cash inflow – year 3 | Value3 | 125000 | 125000 | 125000 | 135000 |
| 8 | Cash inflow - year 4 | Value4 | 100000 | 100000 | 100000 | 120000 |
| 9 | Cash inflow - year 5 | Value5 | 75000 | 75000 | 75000 | 75000 |
| 10 | Present value of future cash inflows | | ₹5,16,283.04 | ₹4,92,637.21 | ₹5,16,283.04 | ₹5,60,200.68 |
| 11 | NPV | | ₹16,283.04 | -₹7,362.79 | -₹33,716.96 | ₹10,200.68 |
| 12 | (e) Proposals (a) and (d) are acceptable as they have positive NPV | | | | | |

Fig. 2.43 Result of NPV Function

## Try Yourself

Periyar Exporters invested ₹8,00,000 in a project . Cash inflows from the project will be ₹ 2,50,000, ₹200,000, ₹3,00,000, ₹1,50,000 and ₹220000 over the next 5years. Projects cost of capital is 3%

Calculate the Net present value and say whether the project is acceptable or not.

## *Let's assess*

1. *The financial function used to calculate accrued interest of a security in the case of periodic payments is ___________*
2. *The function which calculates the future value of an investment based on periodic, constant payment and a constant interest rate is called _______*
3. *Which function calculates the constant interest rate per period of an annuity?*
4. *NPV returns the ___________ of an investment based on a series of periodic cash flows and a discount rate.*

## Let's know more ...

### *Calculation of Present Value*

*The first thing to remember is that present value (PV) of a single amount is the exact opposite of future value (FV). Here is the formula:*

$$PV = FV\ [1/(1 + I)t]$$

*Consider this problem:*

*Let's say that you have been promised ₹1464 after 4 years from today at an interest of 10%. Here, t (term/period) is 4 years. We want to know what is the worth of ₹1464 today (ie., present value)*

*We can calculate the present value of ₹1464 if the interest rate is 10% at the end of 4 years using the formula:*

*PV = 1464 [1/(1 + .10)]4 = 1,000*

*The process of calculating present value is called discounting.*

## 2.7 Data Entry, Text Management and Cell Formatting

To generate useful information, data entered in a spreadsheet should be reliable, accurate and in proper format. This means that data should be validated, corrected and displayed in proper format. Thus, data entry, data validation and data formatting are three important concerns in spreadsheet data handling.

### 2.7. 1 Data Entry

If you are asked to collect details of students of your class which include Class number, Name of student, Date of birth, Fees remitted, Days present etc., how do you enter these data in a worksheet?

- Using key board is one option.
- Data fill option is another option.
- You can even import data from other software.

Let us discuss the above methods in detail.

### (a) Direct data entry

More often, we use the keyboards to input the data. Labels, values and formulas can be entered using alphabets, numbers and special characters in the keyboard. By default the values are right aligned and labels are left aligned. The spreadsheet can distinguish between different types of values; recognise a date, a currency, a percentage etc. For example, if we type 20/10/1980 in a cell, spreadsheet will recognise it as a date and act accordingly. The spreadsheet also processes given formulas and generates the output; which should be in specific format. See the student details entered in the worksheet and the default alignment of each type of data (Fig 2.44).

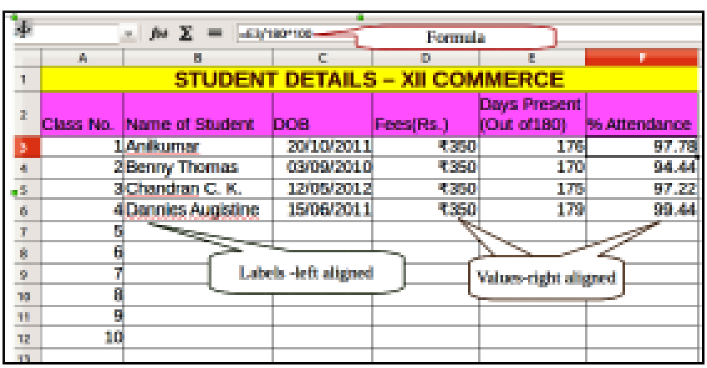



Fig. 2.44 Default alignment in cells

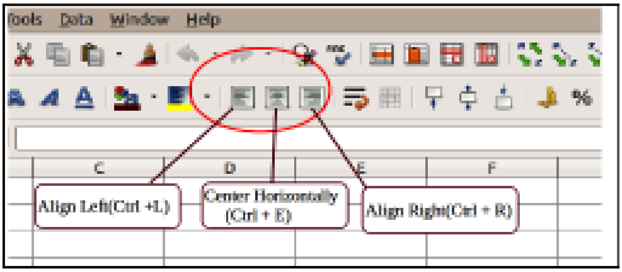



Fig. 2.45 Alignment icons in ribbon

You may change the default alignment to right or left or centre aligned by selecting the cells and click on appropriate icons in the formatting toolbar, as shown in figure 2.45.

## (b) Data fill options

Suppose, if there are '60' students in your class and you need to enter the class number 1 to 60 continuously in the first column. Instead of entering all the 60 numbers one by one, this can be done very easily using a short cut method. You can automatically fill cells with data with the Auto Fill command or the Series command.

### (i) Auto Fill

LibreOffice Calc provides an option for entering data automatically with a series of numbers, text and number combinations, dates, time periods, based on any pattern that we require.

Auto Fill automatically generates a data series based on a defined pattern. The steps to auto fill the data are:

- Enter the first number in a cell, and press enter.
- Move the cursor to the bottom right corner so that it will change to a small black cross which is called fill handle (+ symbol). Click on the mouse and by holding the button drag the fill handle of the cell across the cells that you want to fill, and release the mouse button. Then, all the cells are filled with the same data. But in case of numeric data, the cells are filled with consecutive numbers.
- If you select two or more adjacent cells that contain different numbers and drag, then the remaining cells are filled with the desired arithmetic pattern. For eg. Making a series of values 10,20,30,40,50 and so on, using fill handle is shown in fig 2.46.

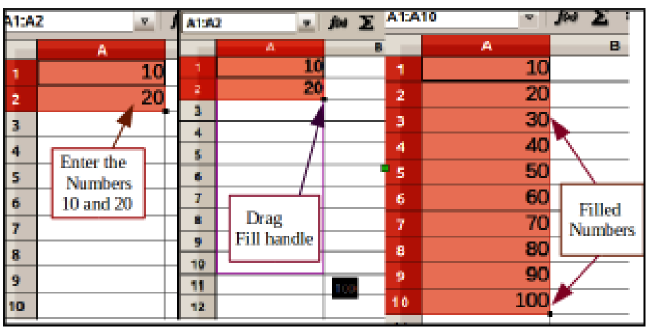



Fig. 2.46 Filling series of numbers using fill handle

## Try Yourself

- Fill days of week in first row-(Enter Monday in cell A1and try to fill till end of the week using fill handle )

- Fill name of months in column ‘A’ (Enter January into A1 and drag the fill handle down to A12 to get the twelve months)

**(ii) Defined Series**

We can also fill the active cell with the contents of an adjacent cell through the 'Fill Series Window'. This fill option is available in the Edit menu . The following steps are involved in filling a series.

- Enter the first value of the series in a cell
- Select the cell range in the sheet that you want to fill.
- Choose **Edit → Fill → Series**

The Fill series window appears in the screen as shown in Fig 2.47.

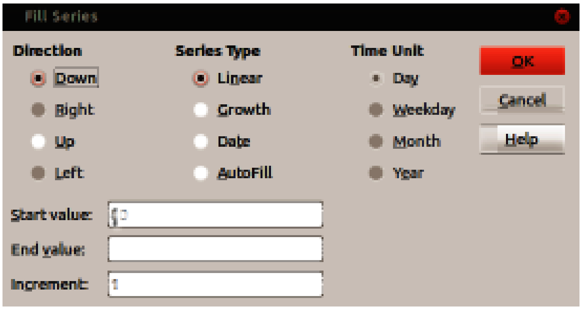


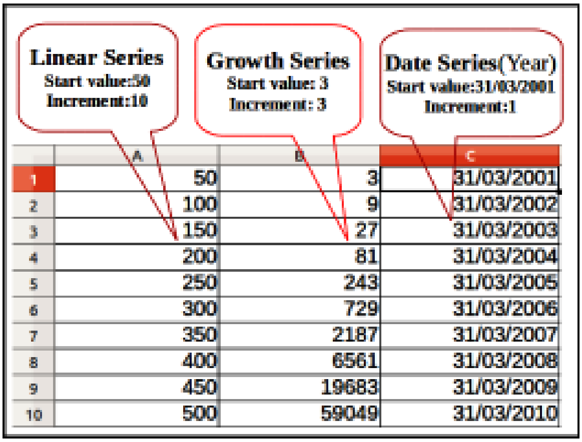

Fig. 2.47 Fill series window

Set the parameters for the series.

Select the direction to which data is to be flowed.

- If you select a linear series, the increment that you enter is added to each consecutive number in the series to create the next value. (Eg:50,100,150,200............)
- If you select a growth series, the increment that you enter is multiplied by each consecutive number to create the next value. (Eg: 3,9,27,81,243........)
- If you select a date series, the increment that you enter is added to the time unit that you specify.(Eg: 31/03/2001, 31/03/2002, 31/03/2003..............)

Give the Start value, End value and Increment. Click 'OK' to fill the series. Observe how this is filled in figure 2.48.




| | A | B | C |
|---|---|---|---|
| 1 | 50 | 3 | 31/03/2001 |
| 2 | 100 | 9 | 31/03/2002 |
| 3 | 150 | 27 | 31/03/2003 |
| 4 | 200 | 81 | 31/03/2004 |
| 5 | 250 | 243 | 31/03/2005 |
| 6 | 300 | 729 | 31/03/2006 |
| 7 | 350 | 2187 | 31/03/2007 |
| 8 | 400 | 6561 | 31/03/2008 |
| 9 | 450 | 19683 | 31/03/2009 |
| 10 | 500 | 59049 | 31/03/2010 |

Fig. 2.48 Filled data using fill handle

## (c) Import Data from other sources

LibreOffice Calc permits transfer of data into required cells by importing an external file to a work sheet. These data files may be either in text files or non-text files format. Text files can be directly read using a text editor. These files often have extension ‘**.txt**’. They may also have other extensions like ‘**.csv**’ (Comma Separated Values), and are easily transferred to a worksheet.

### *How to create a file Text Editor software ?*

Create data file using Text Editor, by the following steps:-

- The path to get Text Editor software is:

  **Applications → Accessories → Text Editor**

- A comma-separated data values in one line of this text file is a row in a spreadsheet and each entry, separated by a comma, is a column entry for that row.
- In the first line give the titles of the columns needed in the spreadsheet.
- In the next line onwards, start entering the data separated by comma in the same order of the column headings. It may be noted that every data may not be of similar length but each data (even a blank data) should be separated by comma. See the example given below.
- Save the created text file in a convenient location in the computer.

Asset_Details

```
Name of asset,Date of purchase,Purchase price,Brokerage,Transportation,Installation charges, Scrap value,life in years
Machinery,01/01/2013,1200000,15000,0,2500,20000,8
Plant,31/03/2013,2500000,200000,12000,40000,500000,12
Motor car,01/08/2013,1400000,0,0,0,200000,7
Furniture,31/10/2013,85000,0,3000,0,5000,10
```

**To import the data from a text file, following steps are to be initiated:-**

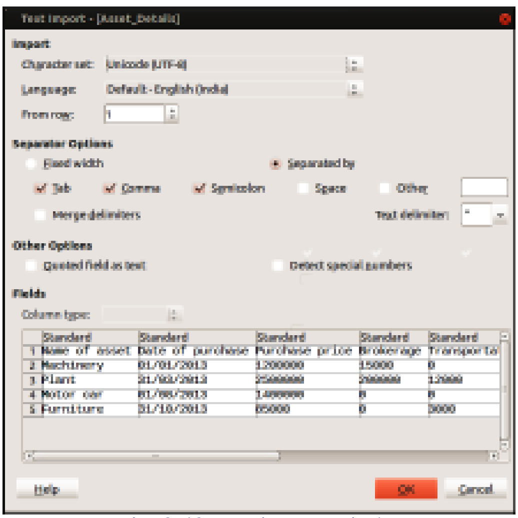



Fig. 2.49 Text import window

1. Open a new LibreOffice Calc worksheet.
2. Click on 'Sheet from File' option from Insert menu. Select the text file with the help of dialogue box that appears and press 'Open' button.
3. Then, the 'Text Import' window appears as shown in Fig 2.49.
4. Click 'OK' in the Text Import window.
5. Then, the 'Insert Sheet' window appears in the screen,

Again click 'OK' on the Insert Sheet window. Then, the text data will be placed in the relevant columns of the spreadsheet. Save the worksheet by giving suitable name.

**Let's know more ...**

*Alternative method to import file to LibreOffice Calc*

*Save the text file 'Asset_Details.txt, in 'csv' format in the desktop. Open the file by clicking on it. 'Text Insert' window appears in the screen, click on 'OK' button. The file will be automatically displayed in a spreadsheet. Since the file is in 'csv' format, importing is not necessary in Calc. Open the text file to display the data in columnar form.*

### 2.7.2 Data Validation

Sometimes, it is possible that we may enter wrong data in a cell by mistake, due to negligence or ignorance in a spreadsheet. How can we prevent such mistakes?

During data entry, accuracy and validity of data are ensured in two ways:-

(a) Using validation option (b) Using Data form

- **Validation option**

Data validation guarantees that each data that you enter will be correct and accurate. By using this function, we can define entries to be valid for one or more cells. Thus, invalid entries to a cell will be rejected. This feature imposes restrictions on the type of data entered into a cell. A warning message for wrong data will be displayed in the cell. We can set a message to inform the users about the type of data to be entered in the cells. It is also possible to give instructions to correct errors by setting 'Error Alert' option in the validity window.

To validate data entry in a particular column, the following steps are to be initiated:-

1. Select the range in which the required data is to be entered.
2. Select 'Data' Menu and choose 'Validity' option, then, the Validity window appears as shown in figure. 2.50

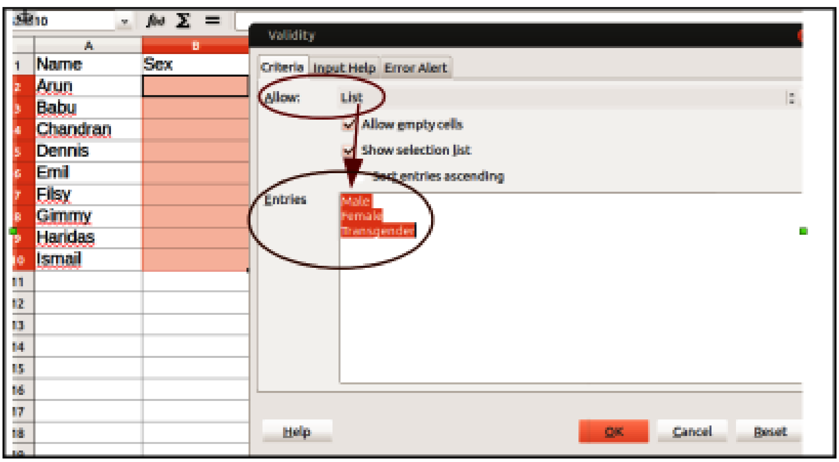



Fig. 2.50 List entries in Validity Window

3. Select the criteria to allow whole numbers, Decimal, Date, Time, Cell range, List etc.

- Select 'List', from the 'Allow' field. Now the 'entries' field appears. Here, enter the possible values one after another in separate line as shown in figure 2.50 and click 'OK'.
- In the field 'Allow', if we select 'Cell Range', the 'Source' option appears in the window. You can insert the specific sheet and provide range address and click

'OK'.(You may toggle between shrink and expand the validity window by clicking on the arrow icon right to source field). This criterion setting is shown in figure 2.51.

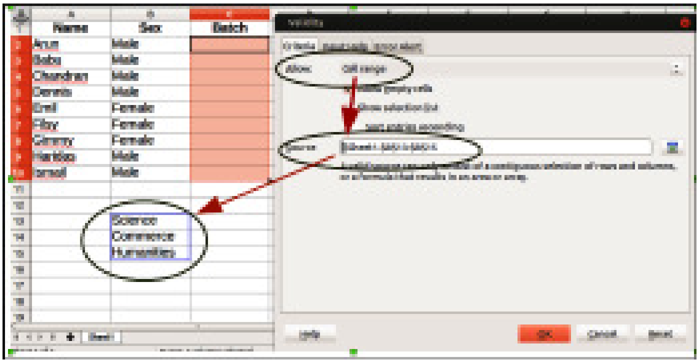



Fig. 2.51 Cell range entries in validity window

4. Set the 'Input Help' in the validity window. Give suitable 'title' and 'Input Help' message as shown in figure 2.52. This setting will display the given input help message at the time of data entry.

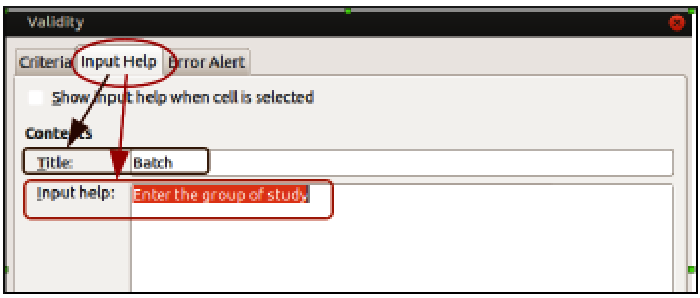



Fig. 2.52 Setting input help in validity window

5. Set 'Error Alert' in the validity window. The character of the field can be specified in the 'Action' field as 'Stop', 'Warning', 'Information' etc. Also give the 'Title' and the 'Error Message'. This settings will display the given Error message when an invalid value is entered in the column. The figure 2.53 depicts the stages of error alert setting.

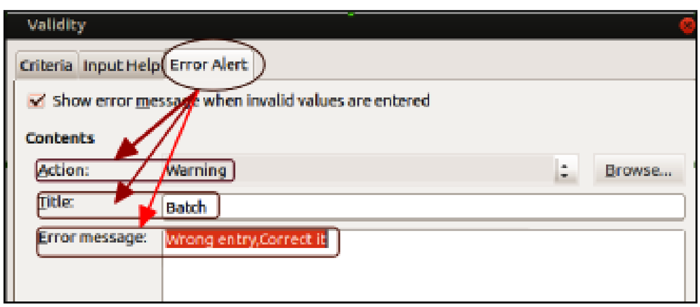



Fig. 2.53 Setting error alert in validity window

- ## Data Form

We can also enter data into cells using 'Data Input Form'. It helps in data validation by reducing the chances of errors in data entry. Using a data form, we can make data entry more easy and accurate, especially when we have more columns for data entry, which cannot be viewed on a screen at a time. For getting the data form, enter the column headings and select cells. Then select 'Form...' option from Data menu. In the displayed 'Data form' window we can fill all the details. Click on 'New' button to get the blank form and the filled data is placed to the respective columns in the table. Click 'Close' button on completing the data entry. Use the tab key for moving to the next field in the data form. Figure 2.54 shows how to prepare the list of students participating in a school level competition with the help of the 'Data Form'.

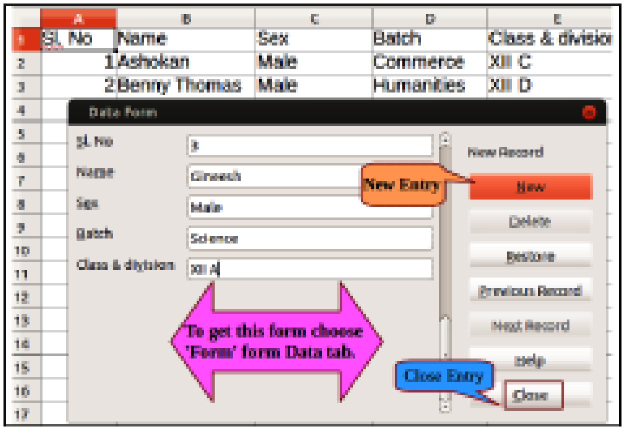



Fig. 2.54 Data entry through form

### Try Yourself

Collect the details of all teachers in your school like Name, Sex, Designation, Subject, Age, Conveyance used, Place of residence etc. Perform the data entry in a worksheet with the help of a Data Form. From the created table find out:-

- Number of teachers retiring within 5 years.
- Number of teachers using public conveyance.
- Number of teachers residing within 8 Kilometres from the school.
- Number of Male teachers in the school.

### *Let's assess*

1. *In spreadsheets, Fill Handle is a small........................*
   *(a) Black square ( b) Arrow mark (c) Cross mark (d) Plus symbol*
2. *'Fill Series' option is available in ................ menu of Calc spread sheet.*
3. *In 'Fill Series' window ............ Series Type is selected to get next value as multiplied by the previous value with the given increment.*
4. *The full form of 'CSV' used in file extension is............*
5. *The data 'Validity' option is available in ............ menu of spreadsheet.*
6. *In data validity window, Error Alert Action can be set to-*
   *(a) Warning (b) Information (c) Stop (d) Any of these*
8. *In spread sheet, data input 'Form' is available in -*
   *(a) Edit Menu (b) Data Menu (c) Insert Menu (d) Tools Menu*

### 2.7.3 Data Formatting

What do formatting does to a spreadsheet?

It makes a worksheet more attractive, easier to read, and emphasises key data. Different formatting attributes like colour, font styles, font size can be applied to cell contents, you can adjust the size of cells, spacing etc.

Formatting means the arrangement of data for computer input or output, in terms of number and size of fields in a record or the spacing and punctuation of information in a report. By using formatting options we can present the worksheet data in an effective manner. We can present some data in bold or rotated form or in different colours to indicate its priority and importance. The worksheet data formatting may be in the following form.

(a) Number Formatting

(b) Text formatting

(c) Conditional formatting

(d) Table formatting

- **Number formatting**

Numbers are formatted to change their appearance. Number formatting includes adding percent symbol (%), comma (,), decimal places, and currency sign (₹) , date, time, scientific values etc. to a spreadsheet. The number format applied will not affect the actual cell value.

Number formatting takes the following steps:

- Select the cell or range to be formatted.
- Go to 'Format' menu and choose 'Number Format' to set values as number, percent, currency, date, time etc.

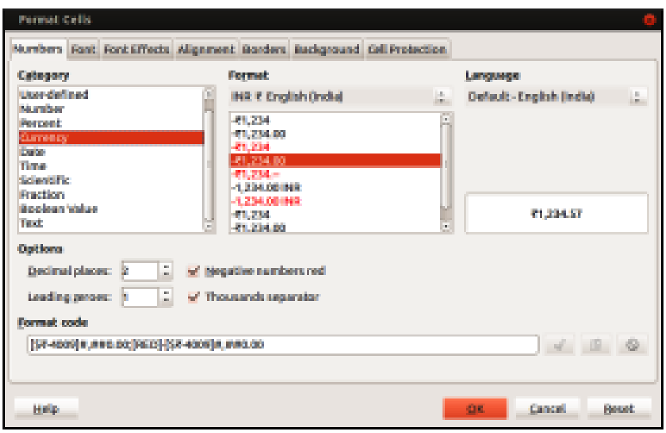



Fig. 2.55 Format cells window

- For advanced formatting, choose 'Cells' from Format menu instead of Number Format. The window pops up allows setting different categories of data with varied features.(The 'Format Cells' option is also possible with the right click of your mouse on the respective cell)
- Set the details like Decimal places, Leading zeros, Thousand separator etc. and confirm the window.

The Format Cells window appears as in figure 2.55.

- ## Text Formatting

The text formatting is mostly required for presentation of final output. It can be used to display the text in different fonts, align the cells, change colour of fonts, merge cells etc.

Text data has default settings in respect of font type, size, colour etc. We can change these features using the options from the formatting toolbar. These tools allow us to add decorative and explanatory material to worksheet and chart. Text formatting can also be done through the 'Format Cells' window. The major option available in Formatting Toolbar are shown in figure 2.56.

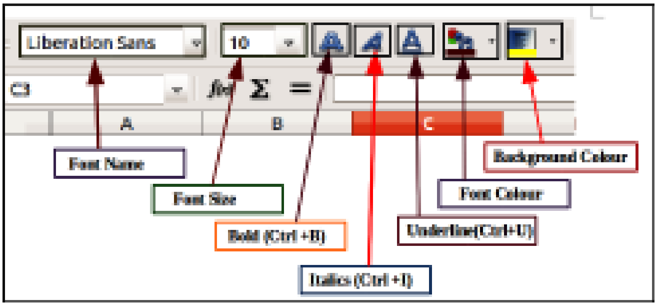



Fig: 2.56 Formatting tools in toolbar

- ## Conditional formatting

The conditional formatting changes the appearance of a cell range based on a condition or criteria. If the specified condition is true, the cell range is formatted automatically. This formatting helps to highlight relevant cells, emphasise unusual values, and visualise data using Colour Scale, Data Bar and Icon Set. Conditional formatting option is available in the 'Conditional Formatting' option in the 'Format' menu.

Using the menu command **Format → Conditional formatting**, the dialogue allows you to define conditions in a cell, which must be met in order for the selected cells to have a particular format. (To apply conditional formatting, 'Auto Calculate' must be enabled. For this, choose **Tools → Cell Contents → Auto Calculate**. You see a check mark next to the command when Auto Calculate is enabled). Conditional formatting has also recalculation facility. If the values in any cell changes, the formatting respond correspondingly, without selecting the format styles again manually.

Consider the example given below to understand the steps in Conditional Formatting.

There are '8' salesman in your business. You have to identify the salesmen who attained the quarterly sales target of ₹ 20,000 from the quarterly sales data. It is easily possible through using special colours to highlight the amounts above the target sales. The sales data of 2017 is shown in figure 2.57.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Sales Data-2017 | | | | |
| 2 | Salesman | Quarter-1 | Quarter-2 | Quarter-3 | Quarter-4 |
| 3 | Anu | 12800 | 17800 | 23400 | 17600 |
| 4 | Baby | 13400 | 16500 | 17700 | 19600 |
| 5 | Beena | 19300 | 15300 | 21800 | 23500 |
| 6 | Jayesh | 21400 | 16800 | 15700 | 15800 |
| 7 | Joseph | 18600 | 18600 | 12700 | 15700 |
| 8 | Prakash | 24200 | 26800 | 16700 | 23400 |
| 9 | Rajesh | 16500 | 17300 | 21500 | 15700 |
| 10 | Valsamma | 15700 | 17500 | 15600 | 22500 |

Fig. 2.57 Sales Data

Follow the given steps:

- Select the cells to which you want to apply a conditional style.
- Choose **Format → Conditional Formatting → Condition ....**
- Enter the condition(s) into the appeared windows, as shown Fig 2.58.

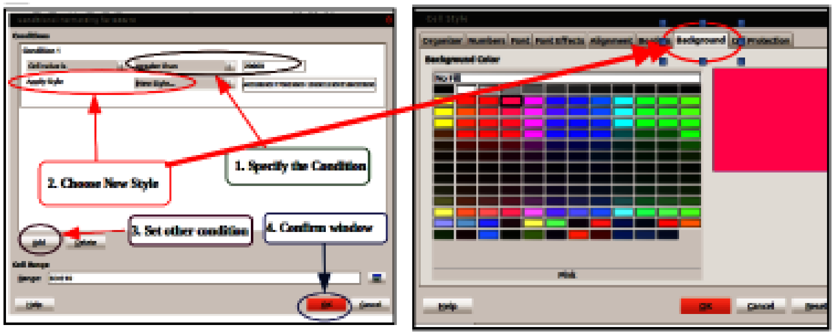



Fig. 2.58 Setting conditions in formatting

Then, the outcome of the above is shown in figure 2.59.

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Sales Data-2017 | | | | |
| 2 | Salesman | Quarter-1 | Quarter-2 | Quarter-3 | Quarter-4 |
| 3 | Anu | 12800 | 17800 | 23400 | 17600 |
| 4 | Baby | 13400 | 16500 | 17700 | 19600 |
| 5 | Beena | 19300 | 15300 | 21800 | 23500 |
| 6 | Jayesh | 21400 | 16800 | 15700 | 15800 |
| 7 | Joseph | 18600 | 18600 | 12700 | 15700 |
| 8 | Prakash | 24200 | 26800 | 16700 | 23400 |
| 9 | Rajesh | 16500 | 17300 | 21500 | 15700 |
| 10 | Valsamma | 15700 | 17500 | 15600 | 22500 |

Fig. 2.59 Formatted sales data

- ## Table formatting

Spreadsheet has predefined style options to format a table quickly.

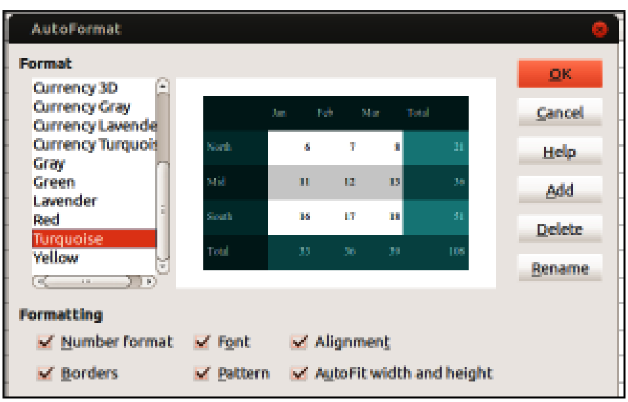



Fig. 2.60 Auto format window

This option formats a range of cells and converts it into a table by choosing a predefined table style. The table formatting steps are as follows:

- Select the range of cells that is to be formatted.
- Select 'Format' menu followed by 'Auto format' in the drop down menu.
- Select predefined Table format, from the appeared Äuto Format' window.

Compare the two tables given in figure 2.61 to find the amazing aspect of formatting:

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | SCHOOL LIBRARY BOOKS 2017 | | | | |
| 2 | Language | Mal | Eng | Hin | TOTAL |
| 3 | Category | | | | |
| 4 | Novels | 898 | 456 | 65 | 1419 |
| 5 | Poems | 212 | 120 | 43 | 375 |
| 6 | Stories | 712 | 236 | 128 | 1076 |
| 7 | Drama | 179 | 132 | 78 | 389 |
| 8 | Travelogue | 125 | 65 | 42 | 232 |
| 9 | Comics | 86 | 32 | 16 | 134 |
| 10 | Others | 12 | 18 | 11 | 41 |
| 11 | TOTAL | 2224 | 1059 | 383 | 3666 |

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | SCHOOL LIBRARY BOOKS 2017 | | | | |
| 2 | Language | | | | |
| 3 | Category | Mal | Eng | Hin | TOTAL |
| 4 | Novels | 898 | 456 | 65 | 1419 |
| 5 | Poems | 212 | 120 | 43 | 375 |
| 6 | Stories | 712 | 236 | 128 | 1076 |
| 7 | Drama | 179 | 132 | 78 | 389 |
| 8 | Travelogue | 125 | 65 | 42 | 232 |
| 9 | Comics | 86 | 32 | 16 | 134 |
| 10 | Others | 12 | 18 | 11 | 41 |
| 11 | TOTAL | 2224 | 1059 | 383 | 3666 |

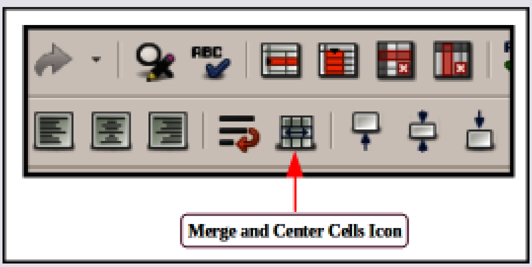
Fig. 2.61 Comparison of raw table and formatted table

**Let's know more ...**

***Merging Cells***

*Merging cells is often used when a title is to be centred over a particular range of cells in a spreadsheet. For this you have to combine the adjacent cells at the top row of the table. Combining of two or more selected cells to form a single cell is called 'Merging Cells'. The cell reference for a merged cell is the upper-left cell in the original selected range. When two or more adjacent horizontal or vertical cells are merged, the cells become one large cell and they are displayed across multiple columns or rows. Then, the cell contents appear in the centre of the merged cell.*

*To merge a group of cells:*




*(a) Select two or more adjacent cells that we want to merge.*

*(b) Click 'Merge and Centre' icon. This icon will be activated only when two or more cells are selected.*

## 2.8 Output Reports

Unless you communicate effectively, the knowledge you mastered and the skills you have shown in spreadsheet application is of little use to others. Report is a document that conveys specific information to others. So it should be attractive, legible and systematically presented for which formatting has a lot to do.

Aligning the margin, adding headers and footers etc., before taking printout will give more readability to the report. The page style can be defined by choosing the 'Page' option of 'Format' menu. Then the default 'Page Style' window appears as in figure 2.62.

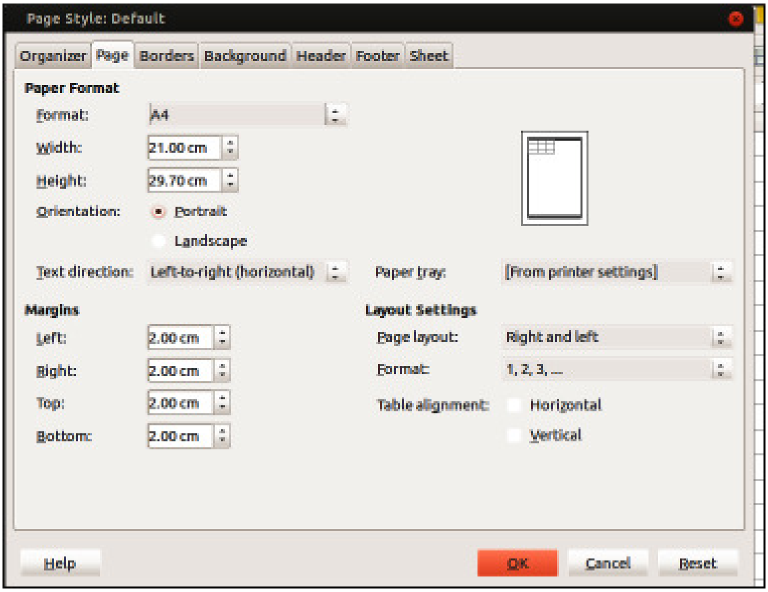


Fig. 2.62 Default page style window

In the window you may set the following-

- The type of paper from the 'Format' option - A4, A3, Legal, Letter etc.
- Set the Width and Height of the print out.
- Set the orientation as Portrait or Landscape. (See figure 2.63).
- Set left, right, top and bottom margins.
- Text direction Left to Right or Right to Left.

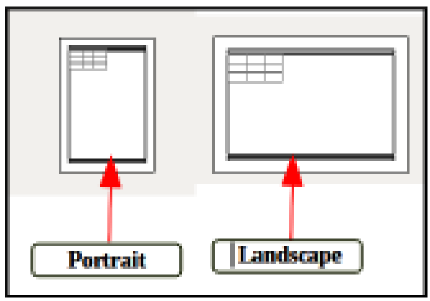


Fig. 2.63 Page orientation

These optional settings allow us to adjust the final appearance of the printed page to suit our needs.

We can print entire or partial worksheets and workbooks. LibreOffice Calc provides the following print options:-

(a) Print a partial or entire worksheet or workbook.

(b) Print several worksheets at once.

(c) Print several workbooks at once.

(d) Print a LibreOffice Calc table.

(e) Print a workbook to a file.

(f) Print a graphic Charts and Pivot Tables.

The print option is available in the 'File' Menu.

The options Print Preview and Printer Settings are also available in the File Menu as shown in figure 2.64. Before printing we have to verify print preview which gives an idea about how the printout may come. The required modifications can be carried out before taking the print out.

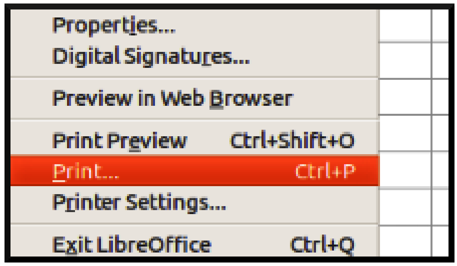



Fig. 2.64 Print File options

## 2.8.1 Defining the Print Area

By default, LibreOffice Calc prints all data on the current worksheet. But we can define print area for specific and formatted print. This print option is available in the 'File' Menu. Follow the steps for defining the Print Area using Print window

(a) Select the range of cells to print.

(b) In the File Menu click on 'Print' option or click on the Print icon from toolbar.

(c) The Print window appears in the screen, as shown in Fig 2.65.

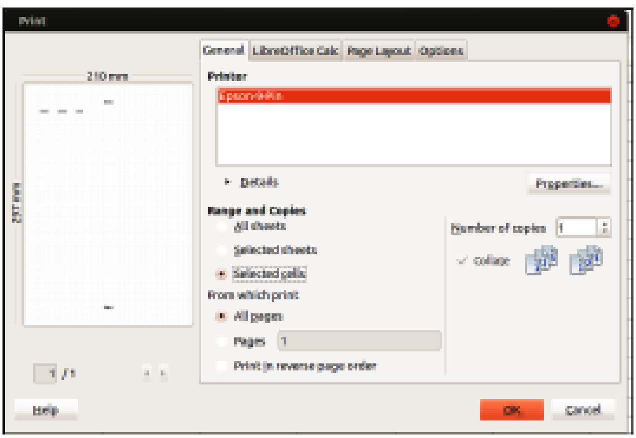



Fig. 2.65 Print window

(d) Select the printer for printing.

(e) In 'Range and Copies' field choose the option 'Selected Cells'.

(f) Enter the number of copies required, then press OK.

## 2.8.2 Print non-contiguous ranges

You can also print non-contiguous cells (cells which do not touch each other) in a single sheet. For this the following steps are to be followed:

(a) Select the first range to be printed.

(b) Press down the control key and then select the other ranges to be printed simultaneously.

(c) From the File Menu click on 'Print' option or click the Print icon on the tool bar.

(d) In the 'Print' window appeared, select the option 'Selected Cells'.

(e) Click 'Ok'

### 2.8.3 Preparation of Reports using Data Tables

A data table is a range of cells that shows the results by substituting different values in one or more formulae. They allow you to see the results of many possible inputs at the same time.

The **'Data → Multiple Operations'** command provides a planning tool for "what if" questions. In your spreadsheet, enter a formula to calculate a result from values that are stored in other cells. Then, set up a cell range where you enter some fixed values, and the Multiple Operations command will calculate the results depending on the formula.

There are two types of data tables:

1. One -variable data table and
2. Two-variable data table.

- **One-variable Data Table**

A one - variable data table is simply a table that shows multiple results, based on different source data. Suppose you have taken a loan of ₹ 2,00,000 and wanted to know the amount of interest payable, if rate of interest is flexible say, 8%, 9% and 10% for a period of 5 years. How can we do this?

The One-Variable Data Table allows you to do this, by changing one variable and will show its effect on the other variable. The Multiple Operations command is used to calculate One-Variable Data Table.

Consider the following example to illustrate the construction of a one-variable table:

The selling cost of a toy is ₹ 100 each. The material cost (Direct cost) of each toy is ₹ 20 and in addition to which you have fixed costs of ₹ 1,00,000 per year. How much profit will you make in a year if you sell a particular number of toys?

You can easily calculate the amount of profit earned from different sales units by preparing a one -variable table. In this case, the quantity sold is the variable, but the selling price is constant. Its steps are given below:-

(a) To calculate the profit, first enter the selling quantity of toys, for example, 2000. The profit can be calculated using the formula:
Profit=Quantity x (Selling price - Direct costs) - Fixed costs.
Use this formula to calculate the amount of profit in B6.

(b) In column 'C' enter given annual sales, one below the other; for example, 500 to 5000, in steps of 500.

(c) Select the range C3:D12, and thus the values in column C and the empty cells alongside in column D.

(d) Choose **Data → Multiple operations.**

(e) With the cursor in the Formulas field, click cell B6.

(f) Set the cursor in the Column input cell field and click cell B2. This means that B2, the quantity, is the variable in the formula, which is replaced by the selected column values.

(g) Close the dialogue box with OK. You see the profits for the different quantities in column D, as shown in Fig 2.66

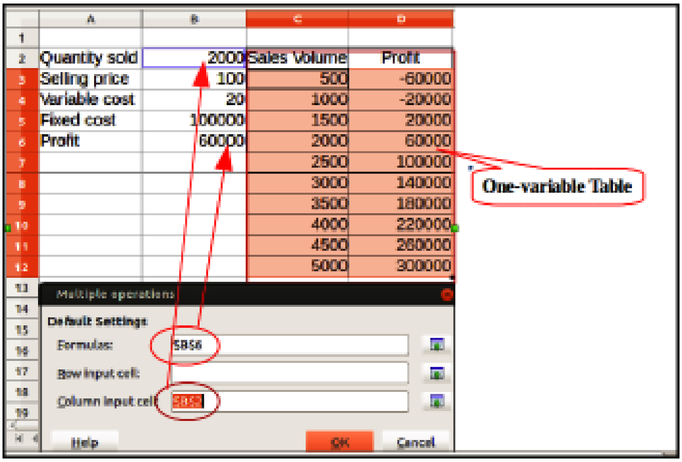



Fig. 2.66 Construction of One-variable Table (Negative amount denotes loss)

*One variable data table may be:-*

1. ***Column-oriented:*** *If your variable values are in column, type the cell reference for the input cell in the Column input cell box. The input cell is B2 in the above illustration*
2. ***Row-oriented:*** *If your variable values are in row, type the cell reference for the input cell in the Row input cell box.*

## ₹ Try Yourself

Your friend is planning to take a loan from a bank for a period of 10 years to construct a new house. The current rate of interest of housing loan is 9.5% per annum. Help him to construct a data table showing the monthly instalment amount, if the loan amount vary from ₹15,00,000 to ₹20,00,000 in multiples of 50,000.

*(Hint: Here loan amount is the variable. Use the PMT function to calculate the loan EMI).*

- **Two-variable Data Table**

Let us recall the example cited in the one variable table where we analysed the effect on the amount of profit at different sales volume. But two variable tables are used to analyse the effect on the amount of profit when two variables are changed ie., quantity sold as well as selling price per unit.

Two-Variable Data Table works similar to the One-Variable Data Table. A two-variable data table is a data table with two input values (Two Variables) and a single result.

LibreOffice Calc allows you to carry out joint multiple operations for columns and rows in so-called cross-tables. The formula cell has to refer to both the data range - row and column. Select the range defined by both data ranges and use the multiple operations option. Enter the reference to the formula in the Formulas field. The Row input cell and the Column input cell fields are used to enter the reference to the corresponding cells of the formula.

Taking the illustration of toys in the one variable table, let us see what changes can be effected when it is converted into two variable table.

Here, both the quantity and the selling price vary. Let us see what impact this will have in the profit of the toys. This two variable table helps to estimate the amount of profit at different sales quantities under various selling prices. (Assume that the selling prices under consideration are 80 to 180 in multiples of 20). Its steps are given below:-

(a) Follow the first two steps, as explained in the one variable table. Calculate the amount of profit in B5 at selling price of ₹100 and quantity sold as 2000 units. Also enter in column 'C' the annual sales volume from 500 to 5000, in steps of 500.

(b) In D2 : I2 enter the numbers from 80 to 180, in multiples of 20.

(c) Select the range C2 : I12.

(d) Choose **Data → Multiple Operations.**

(e) With the cursor in the Formulas field, click cell B5.

(f) Set the cursor in the Row input cell field and click cell B2. This means that B2, the selling price, is the horizontally entered variable (with the values 80 to 180).

(g) Set the cursor in the Column input cell field and click in B1. This means that B1, the quantity, is the vertically entered variable.

(h) Close the Multiple Operations window by pressing OK. You see the profits for the different selling prices in the range C2:I12 as shown in figure 2.67.

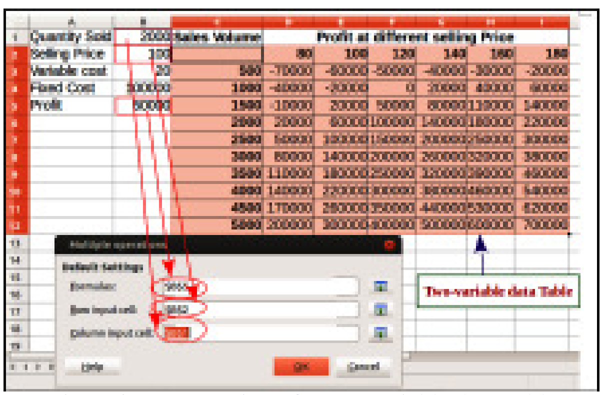



Fig. 2.67 Construction of Two - variable data Table



Downloaded from https:// www.studiestoday.com

## Try Yourself

A firm proposes to purchase a machinery costing ₹1,00,000 having scrap value of ₹5,000, with an economic life of 10 years. Construct a two-variable table showing the amounts of annual depreciation based on the following information.

- Cost of machinery ranging from ₹50,000 to ₹5,00,000 in multiples of ₹50,000
- Useful life ranges from 5 to 10 years.
- Provide depreciation under Straight Line Method.

(*Hint : use multiple operations; the two variables are cost of asses and life of asset*)

### 2.8.4 Preparation of Reports using Pivot Table

Have you ever viewed an object through a kaleidoscope in your primary classes?

When you look at an object through a kaleidoscope, you can see the object in different ways. You can turn the instrument to move the details of the object around.

Think of a Pivot table as a kaleidoscope that is pointed to your dataset. When you look your data through a Pivot table it provides an opportunity to see your data in different perspective.

Pivot Table is a tool for combining, comparing, and analysing large amounts of data easily. It is a table that summarizes source data in another table, displays the details of areas of interest and creates reports. A Pivot table allows you to create an interactive view to your dataset.

A pivot table report provides enhanced layout, attractive and formatted report with improved readability. It enables us to arrange and summarise complicated data easily and drill down on details. This help to analyse numerical data in depth and to answer unanticipated questions about the collected data.

The construction of a pivot table can be illustrated with the help of an example.

You are given ledger account balances under different groups of a business firm in a spreadsheet (See figure 2.68). Can you show group wise summary?

| | A | B | C |
|---|---|---|---|
| 1 | Ledger Accounts | Groups | Amount |
| 2 | Salary | Indirect Expenses | 2500 |
| 3 | Commission | Indirect Expenses | 3500 |
| 4 | Building | Fixed Assets | 25000 |
| 5 | Cash | Current Assets | 15000 |
| 6 | Rent | Indirect Expenses | 4500 |
| 7 | Insurance | Indirect Expenses | 5500 |
| 8 | Machinery | Fixed Assets | 30000 |
| 9 | Bank | Current Assets | 50000 |
| 10 | Furniture | Fixed Assets | 35000 |

Fig. 2.68 Spread Sheet Data

The procedure for pivot table creation is given below:-

1. Enter the data in to spread sheet and select the data range. (A1: C10)
2. On Data Menu Click Pivot Table and then Click on Create to get Pivot table layout.

**Data → Pivot Table → Create.**

The Table Lay out dialog box is shown in figure 2.69.


Fig. 2.69 Pivot table layout

The fields which are included in the 'Pivot Table Layout' window are explained below:-

- **Available Data Fields:** Column heads of the Table such as 'Ledger Accounts', 'Groups', and Amount' are displayed in this area.
- **Page Fields:** This area is used to create a button and a list box on top of the generated pivot table.
- **Column Fields:** It indicates the field on the basis of which the result will be sorted in various columns (eg: Groups)
- **Data Fields:** It must contain at least one field. Only the numerical data which are to be added together is given in this field.
- **Row Fields** : It indicates the field on the basis of which the result will be sorted in various rows (eg: Ledger Accounts).

3. Drag and drop the field buttons into the white areas of Pivot Table Dialogue Box, i.e, 'Ledger Accounts' to Row fields, 'Groups' to Column fields, 'Amount' to Data Field, as shown in figure 2.70.

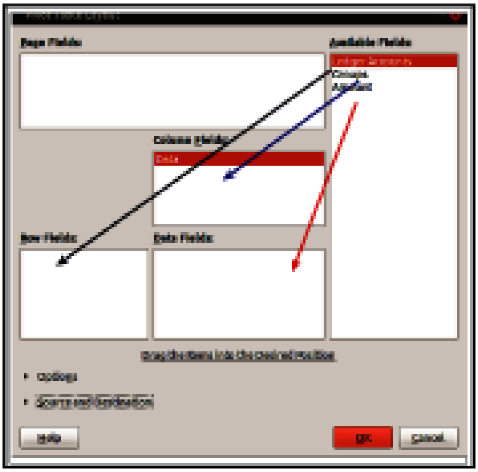
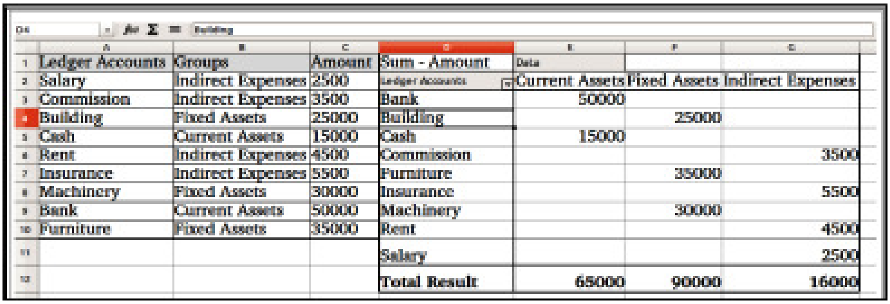



Fig. 2.70 Drag the fields to Pivot Table layout

4. Click on OK button to get Pivot Table Report as shown in figure 2.71.



| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | Ledger Accounts | Groups | Amount | Sum - Amount | Data | | |
| 2 | Salary | Indirect Expenses | 2500 | Ledger Accounts | Current Assets | Fixed Assets | Indirect Expenses |
| 3 | Commission | Indirect Expenses | 3500 | Bank | 50000 | | |
| 4 | Building | Fixed Assets | 25000 | Building | | 25000 | |
| 5 | Cash | Current Assets | 15000 | Cash | 15000 | | |
| 6 | Rent | Indirect Expenses | 4500 | Commission | | | 3500 |
| 7 | Insurance | Indirect Expenses | 5500 | Furniture | | 35000 | |
| 8 | Machinery | Fixed Assets | 30000 | Insurance | | | 5500 |
| 9 | Bank | Current Assets | 50000 | Machinery | | 30000 | |
| 10 | Furniture | Fixed Assets | 35000 | Rent | | | 4500 |
| 11 | | | | Salary | | | 2500 |
| 12 | | | | Total Result | 65000 | 90000 | 16000 |

Fig. 2.71 Pivot table Report

## • Uses of Pivot Table

A pivot table report is designed for:

(a) Sub totalling and aggregating numeric data, summarising data by categories and Sub categories, and creating custom calculations and formulae.

(b) Summarising the data according to the areas of interest from the given dataset.

(c) Moving rows to columns or columns to rows to show different summaries of the source data.

(d) Filtering, sorting, grouping, and conditionally formatting the most useful and the interesting subset of data to enable us to focus on the information that we want.

(e) Presenting concise, attractive, and annotated online or printed reports.

### Try Yourself

Take your household expenses for the last three months, and make a Pivot table showing the month wise house hold expenses.

### *Let's assess*

*1 ................ command is used to construct a One-Variable/ Two variable Data Table.*

*2. The key used to select non-contiguous cells is-*
*(a) Alt (b) Ctrl (c) Shift (d) Tab*

*3. 'Multiple Operations' option is available in ....................tab.*
*(a) File (b) Insert (c) Table (d) Data*

*4. The spreadsheet feature that allows creating a cross tabulation summary of data is ................*

*5. Pivot Table option is available in ...................tab of LibreOffice Calc.*

*6. In a pivot table, the data which require aggregation are drag and drop to:*
*(a) Page fields (b) Column fields (c) Row fields (d) Data fields*

## 2.9 Common Error Codes (Messages) in LibreOffice Calc

Consider the case given below:

Take a worksheet and type the name and score as shown in the table given below. Also try to enter the formula as it is shown in C2 to C5.

| | A | B | C |
|---|---|---|---|
| 1 | Name | Economics | Formula/Functions |
| 2 | Abdulla | 45 | =B2+B3+B4+B5 |
| 3 | Alex | Ab | =SU(B2:B5) |
| 4 | Basil | 0 | =B2/B4 |
| 5 | Devan | 45 | =7899^7E+123 |

- Have you encountered any problem while entering the formula?
- What is the result obtained?
- Is there any mistakes in the given formula or function?

At the time of entering the above formula you might have received some error messages. For rectifying the mistakes occurred in a formula, it is essential to understand the common error messages very well.

Observe the error messages in cell C2:C5 shown in figure 2.72.

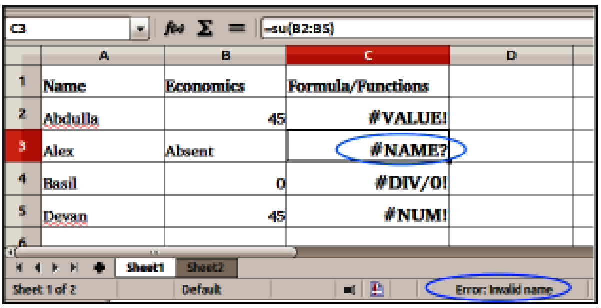



Figure 2.72 Error message

LibreOffice Calc provides some messages for errors of miscalculations, incorrect use of functions, invlid cell refernces and values and other mistakes committed by users.

### 2.9.1 ### Error

This error occurs when a numerical value entered in a column is not enough to display the contents. This is not really an error value, so there is no corresponding numerical error code. It happens when the columns are too narrow for holding the data.

Solution to this problem is -

1) Increase the width of the column.
2) Select the column, then go to **Format** → **Cells** → **Alignment** and click Shrink to fit cell size.

3) Select the Column , then go to **Format →Column →Optimal width** and Click Ok button

### 2.9.2 #DIV/0! Error ( Error code - 532)

#DIV/0! error is displayed, when a number is divided by zero (0). It happens when you enter a simple formula like =5/0, or when a formula refers to a cell that has zero value or the cell is blank.

*An error message for a formula is usually a three-digit number from 501 to 527, or some-times an unhelpful piece of text such as #NAME?, #REF, or #VALUE. The error message /code appears in the cell and a brief explanation of that error on the right side of the status bar.*

**Solution to this problem is:**

a) Change the cell reference to another cell.

b) Enter a value other than zero in the cell used as a divisor

c) Prevent the error message by using the logical function IF..

For Example =IF(B1=0," ",A1/B1) . Here cell B1 equals 0, an empty string (" ") is displayed. If not, the result of the formula A1/B1 is displayed as shown in figure 2.73.

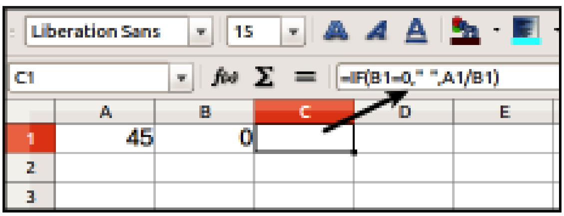
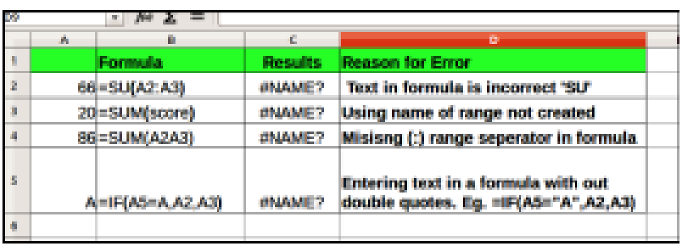



Fig. 2.73 Prevent #DIV! Error using the logical function IF

### 2.9.3 #NAME Error ( Error code - 525)

This error occurs when LibreOffice Calc does not recognise the Text in formula. This may occur with misspelled formula or named range. The error also occurs if we forget to close a text in double quotes or omit the range operator in formula as shown in figure 2.74. So enter proper formula name, named range, range operator to avoid these types of errors.



| | A | B | C | D |
|---|---|---|---|---|
| 1 | | Formula | Results | Reason for Error |
| 2 | 66 | =SU(A2:A3) | #NAME? | Text in formula is incorrect 'SU' |
| 3 | 20 | =SUM(score) | #NAME? | Using name of range not created |
| 4 | 86 | =SUM(A2A3) | #NAME? | Misisng (:) range seperator in formula |
| 5 | A | =IF(A5=A,A2,A3) | #NAME? | Entering text in a formula with out double quotes. Eg. =IF(A5="A",A2,A3) |
| 6 | | | | |

Fig 2.74 Examples of #NAME! error

### 2.9.4 #REF! Error (Error code - 524)

The #REF! Error shows up when a formula referred to a cell that is not valid. This happens most often when cells that were referred by formulas get deleted. For example, enter the formula

=A1+B1+C1 in Cell D1, then delete the Column C1, immediately the formula return #REF!

To fix the errors, you can either delete +#REF!, in the formula or you can undo your action by pressing Ctrl+Z.

### 2.9.5 #VALUE! Error

This error occurs when a wrong argument is given in a formula. For example, if cell A1 contains a number 25 and cell A2 contain the text 'commerce'. The formula =A1+A2 return an error message #VALUE! This type of error is generated when one of the variables in the formula is of the wrong type (e.g.:- cell referred by the formula contains text instead of a number).

### 2.9.6 #NUM! Error (Error code - 503 )

The #NUM! Error occurs when a calculation resulted in an overflow of the defined value range. For example, while filling data by using Fill series option [ Edit --> Fill --> Series ], the selected range to display the content is more than the required cell , the #NUM! Error will be displayed after the end value in the selected range as shown in figure 2.75.

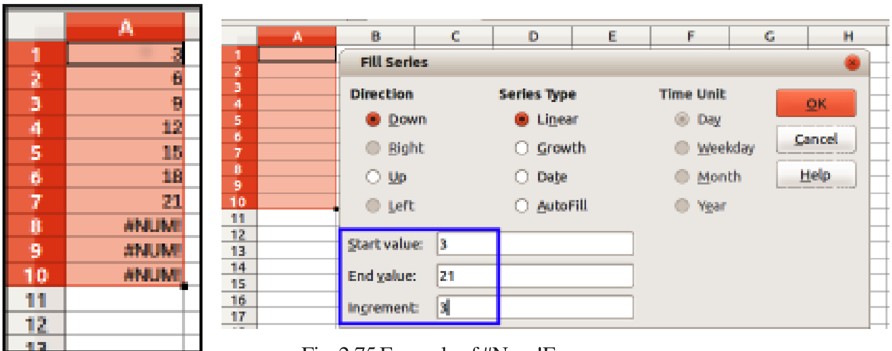



Fig. 2.75 Example of #Num!Error.

It also appears when a function argument is inappropriate or formula produces a number too larger/small to be represented. Example, if we enter the formula =78999^7E+123 in a cell, the result will be a '#NUM! Error'.

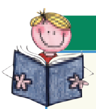
### Summary of Common errors in LibreOffice Calc

| Error Message | Error Code | Explanation of the error |
|---|---|---|
| ### | N/A | When a numerical value entered in a column is not enough to display the contents |
| #DIV/0! | 532 | When a number is divided by zero (0) |
| #NAME | 525 | When a Calc does not recognise the Text in formula |
| #REF! | 524 | When a formula refers to a cell that is not valid |
| #VALUE! | 519 | When a wrong argument is given in a formula |
| #NUM! | 503 | When a calculation resulted in an overflow of the defined value range |

## Summary

- Electronic spreadsheet : It is a worksheet consisting of several rows and columns used to store and manipulate large volume of data through computers.
- LibreOffice Calc: It is a spreadsheet application that you can use to calculate, analyse, and manage data.
- Features of LibreOffice Calc: Easy calculations, What-if calculations, Database functions, Arranging data, Dynamic charts, Opening and saving Microsoft files.
- Components LibreOffice Calc: Rows and Columns, Cell and Ranges.
- Naming Ranges: Use special name to refer the range in a formula.
- Spreadsheet Operations: Open Work sheet, Save Worksheet, Close work sheet, Quit LibreOffice Calc, Add worksheet, Delete worksheet and Rename worksheet.
- Spreadsheet Navigation: Using Mouse , Using a cell reference and Using the Navigator.
- Worksheet Data: Spreadsheets usually have three types of data to be entered in a cell such as Value , Label and Formula.
- Cell References: It identifies the location of a cell or group of cells in the spreadsheet. A cell reference may be relative, absolute and mixed.
- Mathematical operators: A spreadsheet usually uses three types of operators or symbols: Arithmetic, Comparison and Reference.
- Functions: They are the pre-defined formulae in spreadsheets.
- Date & time functions: TODAY, NOW, YEAR, MONTH, DAY, DATEVALUE and DATE
- Statistical Functions: COUNT, COUNTA, COUNTBLANK and COUNTIF.
- Mathematical functions:SUM,SUMIF, ROUND,ROUNDUP and ROUNDDOWN.
- Text functions:TEXT and CONCATENATE.
- Logical functions: IF, NESTED IF, AND and OR.
- Spreadsheet Functions: LOOKUP (Vector form), LOOKUP (Array form), VLOOKUP and HLOOKUP, ROWS and COLUMNS.
- Financial functions : ACCRINT, RATE, CUMIPMT, PV, PMT, FV and NPV

- Data entry: The three options for attaining input are Direct data entry, Data fill options and Import data from other sources.
- Data fill options: You can automatically fill cells with data with the Auto Fill command or the Series command.
- Data validation: We can prevent the wrong data to be entered in a cell by validation process. During data entry accuracy and validity of data can be ensured in two ways: Using validation option and Using Data form.
- Data formatting: It means the arrangement of data for computer input or output, such as the number and size of fields in a record or the spacing and punctuation of information in a report. The worksheet data formatting involves the following aspects-Number formatting, Text formatting, Conditional formatting, and Table formatting.
- Output reports: Before printing the final report, we should adjust it for better readability. We can change the margin of sheets, add headers and footers etc, before taking the printout.
- One-variable Data Table: This Data Table allows you to get multiple results by changing anyone of the given variables. The Multiple Operations command is used to calculate One-Variable Data Table.
- Two-variable Data Table: A two-variable data table is a data table with two input values (Two variables) and a single result.
- Pivot Table: It is a tool for combining, comparing, and analysing a large amount of data easily. It is a table that summarizes source data in another table, displays the details of areas of interest and creates reports.
- Common error messages in LibreOffice Calc: ### Error, #DIV/0! Error,#NAME Error, #REF! Error ,#VALUE! Error, and #NUM! Error.



## I can

- outline the concept of spreadsheet and its basic features
- state how to use a spread sheet for various purposes
- explain the use of various output reports and equip them to prepare reports using spread sheet
- check various errors while working with formulae and functions and apply the knowledge in error handling

## TE QUESTIONS

1. A spreadsheet file that contains one or more worksheets is called a ...............

   (a) Database (b) Workbook (c) Range (d) Cell reference
2. Which of the following component displays the contents of active cell?

   a. Name box b. Formula bar c. Menu bar d. Status bar
3. Identify the function which helps to convert a date in the form of text to a number.

   (a) DATE (b) DAY (c) DATEVALUE (d) NOW
4. Which function is used to count the number of empty cell in the given range?
5. Write the formula for displaying the number 89.5796 as 89.57.
6. Explain the features of LibreOffice Calc.
7. Describe different ways of cell referencing in Calc.
8. Explain different statistical functions available in LibreOffice Calc.
9. What are the different types of data that can be entered into cells?
10. Differentiate function and formula in spreadsheet with a suitable example.
11. Explain the merits of naming ranges in a spreadsheet.
12. Explain different logical functions of LibreOffice Calc.
13. Explain the various data fill option available in Calc.
14. Name the function and give its syntax for calculating the present value of an investment resulting from a series of regular payments.
15. Identify the relevant functions used for the following purposes.

    (a) To count all types of data in a range of cells.

    (b) To join several text strings in different cells into one string.

    (c) To calculate the constant interest rate per period of an annuity.
16. On 01/01/2017 Aswathy took a Car Loan of ₹ 7,00,000 from Canara Bank at 12% interest per annum. The period of Loan is 10 years and payment is to be made at the end of every month.

    (a) Identify the function to calculate the EMI of Car Loan in LibreOffice Calc.

    (b) Give its syntax and explain its parameters.

17. What is Pivot Table ? List out its advantages.
18. Mr. Babulal faced the following error while work in spreadsheet. State the reason for each error.
    (a) ### (b) #DIV/0! (c) #NAME (d) #VALUE!
19. Name the functions used to display the following results in LibreOffice Calc.
    (a) Current System Date (b) Current date with time
20. Explain the purpose of the following functions.
    (a) COUNTIF (b) SUMIF
21. Write two text manipulation functions in Libreoffice Calc.
22. Write down the syntax of the following functions.
    (a) VLOOKUP (b.) HLOOKUP

## PE QUESTIONS

1. Given below is a table showing the Name, Designation and Net Salary paid to the 10 employees in Goodluck Traders for January 2018

| Emp. No. | Name | Designation | Net Pay (₹) |
|---|---|---|---|
| 1. | Anumol | Manager | 40000 |
| 2. | Shinoj | Accountant | 35000 |
| 3. | Prakashan | Supervisor | 22000 |
| 4. | Rajesh | Salesman | 14000 |
| 5. | Subhramaniyan | Salesman | 12000 |
| 6. | Jobish | Salesman | 11500 |
| 7. | Jayesh | Salesman | 10000 |
| 8. | Valsamma | Clerk | 8000 |
| 9. | Shaju | Clerk | 7000 |
| 10. | Joseph | Peon | 6500 |

Find out the following using appropriate spreadsheet operations:-

(a) The Total Salary payable in the month of January 2018 by Naming the concerned range as 'TOTAL_PAY'.

(b) The total monthly salary paid to the Salesmen in the firm.

(c) Display Name of employee with Net Pay of ₹ 10,000 by using 'LOOKUP' Function.

2. Following are the scores obtained by Sumisha, the top scorer in Humanities class, for the Higher Secondary Examinations-March 2017.(Maximum score for TE is 80 and CE is 20)

| SUBJECT | TE | CE |
|---|---|---|
| English | 42 | 16 |
| Malayalam | 78 | 20 |
| History | 59 | 18 |
| Sociology | 65 | 20 |
| Economics | 51 | 17 |
| Political Science | 67 | 18 |

Find out her total score in each subject and the corresponding grades assigned, on the basis of the given criteria:

(Hint: Use Nested IF Function to assign the Grades)

| Scores | Grades |
|---|---|
| 90 - 100 | A+ |
| 80 - 89 | A |
| 70 - 79 | B+ |
| 60 - 69 | B |
| 50 - 59 | C+ |
| 40 - 49 | C |
| 30 - 39 | D+ |
| 20 - 29 | D |
| Below 20 | E |

3. Create the given table in a spreadsheet:-

| | | | | | | |
|---|---|---|---|---|---|---|
| 100000 | 34000 | Cash | 23000 | 12000 | 55000 | 20000 |
| Assets | 16000 | Stock | 43000 | 56000 | Liability | |
| 50000 | 12000 | 45000 | 21000 | Creditors | 19000 | 32000 |
| Debtors | 22000 | 76000 | 26000 | 31000 | Capital | 64000 |

Find the answers to the following questions using appropriate spreadsheet functions:

(a) How many cells contain amounts only?

(b) Count the Number of cells containing any value.

(c) How many empty cells are there in the given table?

(d) Count the Number of cells containing values exceeding 50000.

4. Following table shows the details of students admitted in Plus One classes:

| Ad. No. | Name of Student | Course Code | Second Language | Sex | Date Of Birth | Date of Admission |
|---|---|---|---|---|---|---|
| 13041 | Arunkumar C. P | 11 | Malayalam | Male | 05/02/2002 | 12/06/2017 |
| 13042 | Suresh Babu K. | 5 | Hindi | Male | 12/09/2001 | 12/06/2017 |
| 13043 | Anwar Ali C. K. | 38 | Hindi | Male | 07/03/2002 | 18/06/2017 |
| 13044 | Maheswari. S | 1 | Malayalam | Female | 12/1/2013 | 19/06/2017 |

Enter the details into a Text Editor software and import the same to a spreadsheet.

5. The following table shows the amounts of Net Sales, Cost of Goods Sold and Indirect Expenses of last 5 yeas of Arun Traders:-

| Items | 2013 | 2014 | 2015 | 2016 | 2017 |
|---|---|---|---|---|---|
| Net Sales | 200000 | 240000 | 320000 | 340000 | 520000 |
| Cost of Goods Sold | 124000 | 165000 | 224000 | 259000 | 442000 |
| Indirect Expenses | 32000 | 34000 | 41000 | 38000 | 39000 |

(a) Calculate the Gross Profit and Net Profit of all the 5 years using the appropriate formula.

(b) Display the 'Net Profit' of 2017 using VLOOKUP Function.

6. Following table comprises of the salary details of 8 employees in Kumar Associates for the year 2016-'17.

| Name of Employee | Gross Salary (₹) | Eligible Deductions (₹) |
|---|---|---|
| Amal | 438000 | 65400 |
| Balu | 567000 | 63200 |
| Chandran | 645000 | 49500 |
| Devasia | 760000 | 98500 |
| Filsy | 743000 | 65800 |
| George | 787000 | 112000 |
| Haridas | 812000 | 97600 |
| Ismayil | 817000 | 67900 |

(a) Calculate the Taxable Income of each employee, by deducting Eligible Deduction from the Gross salary.

(b) Compute the income tax liability of each employee based on the following criteria, by using appropriate function in spreadsheet, if taxable income is:

(i) below 250,000, No tax.

(ii) ₹ 250,000 to ₹ 500,000 Tax rate is 10%

(iii) Above ₹500,000 Tax rate is 20%

7. The loan information provided by a bank are shown below:-

   Loan amount - ₹ 200,000

   No. of Payments - 60 months

   Annual Rate of interest - 12%

   (a) Calculate the yearly instalments of loan repayment using the PMT Function.

   (b) Prepare a one variable table to show the yearly instalments of the above loan, if the number of payment varies from 1 to 6 years.

8. Mr. Biju Lucka took a loan of ₹ 400,000 from Union Bank of India, Kannur and repayable in 72 monthly instalments. Calculate the rate assuming payment is ₹ 6500 per month using appropriate Spreadsheet Function.

9. As a Financial Manager, you are considering the investment proposal to purchase a Plant and Machinery costing ₹ 25,00,000. The expected future cash inflows during the next 5 years were ₹8,00,000, ₹ 7,60,000, ₹ 7,40,000, ₹ 7,00,000 and ₹ 6,60,000.

   The cost of capital of the industry is 12% p. a. Calculate NPV and evaluate the investment proposal.

10. The scores of 10 students in a class test for Accountancy are given:

| Name of Students | Scores(out of 20) |
|---|---|
| James | 9 |
| Jexin | 12 |
| Selastin | 8 |
| Melvin | 19 |
| Tomy | 13 |
| Beena | 18 |
| Seena | 7 |
| Agnes | 20 |
| Daphy | 14 |
| Anila | 17 |

   (a) Assign Grade to the students based on the following criteria, using Nested IF Function:-

   Scores above 15 to be graded as 'A'.

   Scores between 10 to 15 to be graded as 'B'.

   Scores below 10 to be graded as 'C'.

   (b) Highlight the scores below '10' in 'red' background, using Conditional Formating.

# APPENDIX

## Lab Work 1 (Naming the ranges)

The cash receipts and cash payments of a trader during the month of January 2017 are given below:

2017 January

1. Cash in hand ₹ 12,000.
2. Cash sales ₹ 6700.
4. Paid rent ₹ 4300.
9. Cash purchases ₹ 8,300.
12. Cash withdrawn for personal purpose ₹ 4500.
15. Paid wages ₹ 600.
22. Cash Sales ₹ 15,000.
30. Paid to Creditor, Sunil ₹ 3000.

Prepare a Cash Book using the spreadsheet. Find the closing balance by naming respective ranges as 'Cash_Debits', and 'Cash_Credits'

**Process:**

Step-1: Enter the title as 'Cash Book' in the first row.

Step-2: Enter column headings as Date ,Receipts, Amount, Date, Payments, Amount in second row.

Step-3: Enter the items of cash receipts-Date in column A, Name of account in column B and its respective amounts in Column C. Similarly, enter the items of cash payments-Date in column D, Name of account in column E and its respective amounts in Column F.

Step-4: Select the Receipts Side amounts and name the range as 'Cash_Debits'.

Similarly,Select the Payments Side amounts and name the range as 'Cash_Credits'. (Insert → Names → Define...)

Step-5: In C9, give the formula '=SUM(Cash_Debits)' to find the debit total. Choose the 'Cash_Debits' from the 'Paste Name' window.(Insert → Names → Insert....)

Step-6: In F9 give the formula '=C9' to enter the same total on payments side.

Step-7: In D8, enter the date as '31/01/17'.In E8, enter 'Balance c/d'. In F8, enter the formula as '=C9 - SUM(Cash_Credits)' to calculate the amount of closing balance.

*Output*

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | CASH BOOK | | | | | |
| 2 | DATE | RECEIPTS | AMOUNT | DATE | PAYMENTS | AMOUNT |
| 3 | 01/01/17 | Balance b/d | 12000 | 04/01/17 | Rent a/c | 4300 |
| 4 | 02/01/17 | Sales a/c | 6700 | 09/01/17 | Purchases a/c | 8300 |
| 5 | 22/01/17 | Sales a/c | 15000 | 12/01/17 | Drawings a/c | 4500 |
| 6 | | | | 15/01/17 | Wages a/c | 600 |
| 7 | | | | 30/01/17 | Sunil's a/c | 3000 |
| 8 | | | | 31/01/17 | Balance c/d | 13000 |
| 9 | | | 33700 | | | 33700 |

=SUM(Cash_Debits)

=C9 - SUM(Cash_Credits)

=C9

## Lab Work 2 (Datevalue & Round functions)

| Application No. | Candidate Name | Date of Birth |
|---|---|---|
| 1 | Harikrishnan | 12-08-2001 |
| 2 | Devaraj | 01-01-2000 |
| 3 | Ruksana | 24-06-1977 |
| 4 | Malavika | 31-12-1988 |
| 5 | Ajeesh | 03-04-1999 |

For applying for the post of an accountant, the minimum and maximum age is fixed at 18 years and 38 years respectively. The following list gives the date of birth of few candidates. The cut-off date for calculating age is 01/01/2018. Calculate the age of the candidates as on cut-off date.

**Process:**

The following steps are required for finding out the result

Step 1. Enter the data given above in a worksheet in the same format as seen above.

Step 2. Enter the cut-off date from cells D2:D6

Step 3. Select Cell E2 and enter the formula, =D2-C2 and press Enter Key
(Now 'Age in days' will be displayed in cell E2)

Step 4. Copy the formula in Cell E2, by clicking on and dragging the fill handle downwards to the required cells (E3:E6).
(Now 'Age in days' will be displayed in cell E3:E6)

Step 5. Select Cell F2 and enter the formula, =ROUND(E3/365.25,0) and press Enter Key (Now Age rounded-off to year will be displayed in cell F2. If not round-off it will be displayed as 16.3887748118, hence we round-off)

Step 6. Copy the formula in Cell F2, by clicking on and dragging the fill handle downwards to the required cells (F3:F6). (Now 'Age rounded-off to year will be displayed in cell F3:F6)

*Output*

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Application No. | Candidate Name | Date of Birth | Cut-off date | Age in days | Age rounded off |
| 2 | 1 | Harikrishnan | 12/08/2001 | 01/01/2018 | 5986 | 16 |
| 3 | 2 | Devaraj | 01/01/2000 | 01/01/2018 | 6575 | 18 |
| 4 | 3 | Ruksana | 24/06/1977 | 01/01/2018 | 14801 | 41 |
| 5 | 4 | Malavika | 31/12/1988 | 01/01/2018 | 10593 | 29 |
| 6 | 5 | Ajeesh | 03/04/1999 | 01/01/2018 | 6848 | 19 |

## Lab Work 3 (SUM and SUMIF Functions)

The list of various Assets in Modern Traders is given below. By using SUMIF function compute:

(a) Total value of Current Assets
(b) Total Value of Fixed Assets
(c) Also calculate the Value of Total Assets by using SUM Function

**Process :**

The following steps are required.

Step 1. Enter the data given above in a worksheet in the same format as seen above.

Step 2. Select Cell E2 and enter the formula, =SUMIF(B2:B8,"CA",C2:C8) and press Enter Key

(Now Total value of Current Assets will be displayed in E2)

Step 3. Select Cell E4 and enter the formula, =SUMIF(B2:B8,"FA",C2:C8) and press Enter Key

(Now Total value of Fixed Assets will be displayed in E4)

Step 4. Select Cell E6 and enter the formula, =SUM(C2:C8) and press Enter Key (Alternatively select C2:C8 and use Sum ($\Sigma$) key)

(Now Value of Total Assets will be displayed in cell E6)

***Output***

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Name of Asset | Fixed / Current Asset | Amount | | RESULT | Function used |
| 2 | Land and Buildings | FA | 75000 | Total Current Assets | 54500 | =SUMIF(B2:B8,"CA",C2:C8) |
| 3 | Cash in Hand | CA | 6000 | | | |
| 4 | Plant and Machinery | FA | 60000 | Total Fixed Assets | 160000 | =SUMIF(B2:B8,"FA",C2:C8) |
| 5 | Sundry Debtors | CA | 12500 | | | |
| 6 | Furniture | FA | 25000 | | 214500 | =SUM(C2:C8) |
| 7 | Stock of goods | CA | 15000 | | | |
| 8 | Cash at Bank | CA | 21000 | | | |

## Lab Work 4 (COUNT, COUNTA, COUNTBLANK and COUNTIF Functions)

From the given table find out :

(a) Number of cells containing numbers only.
(b) Number of cells containing any value.
(c) Number of cells having no values

(d) Count the number of cells have value more than 2000

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1 | 1220 | | 12/08/17 | 1856 | 2365 | 125R | Cash |
| 2 | Buildings | 4565 | 1317 | Land | "13/10/2017" | | R145 |

**Process:**

Step 1 Open LibreOffice Calc.

Step 2 Enter the data in cells from A1 to G2 as in the question

Step 3 To get the Number of cells contains Numbers only , Set the formula in E3 =COUNT(A1:G2)

Step 4 To get Number of cells that contains any value, Set the formula in E4 =COUNTA(A1:G2)

Step 5 To get Number of cells that contains no values (or blank cells), set the formula in E5 =COUNTBLANK(A1:G2)

Step 6 To get the Number of cells having values exceeding 2000, Set the formula in E5
=COUNTIF(A1:G2,">2000")

***Output***

| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | 1220 | | 12-08-17 | 1856 | 2365 | 125R | Cash |
| 2 | Buildings | 4565 | 1317 | Land | "13/10/2017" | | R145 |
| 3 | (a) Number of cells containing numbers only | | | | **6** | Date with out inverted comma is considered as number and within inverted comma is considered as Text) | |
| 4 | (b) Number of cells containing any value. | | | | **12** | | |
| 5 | (c) Number of cells having no values | | | | **2** | | |
| 6 | (d) Number of cells have value more than 2000 | | | | **3** | | |

## Lab Work 5 (COLUMNS and ROWS Functions)

From the following array find the number of columns and number of rows by using COLUMNS and ROWS function.

**Process:**

| | BF | BG | BH | BI | BJ | BK |
|---|---|---|---|---|---|---|
| 68 | | | | | | |
| 69 | | | | | | |
| 70 | | | | | | |
| 71 | | | | | | |
| 72 | | | | | | |
| 73 | | | | | | |

Step 1 Open LibreOffice Calc.

Step 2 Select the cell where number of columns are required (Here BJ74) and set the formula =COLUMNS(BF68:BP73) which will return number of columns in the array

Step 3 Select the cell where number of rows are required (Here BJ75) and set the formula =ROWS(BF68:BP73) which will return number of columns in the array.

*Output*

| | BE | BF | BG | BH | BI | BJ | BK | BL | BM | BN | BO | BP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 68 | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
| 69 | | 2 | | | | | | | | | | |
| 70 | | 3 | | | | | | | | | | |
| 71 | | 4 | | | | | | | | | | |
| 72 | | 5 | | | | | | | | | | |
| 73 | | 6 | | | | | | | | | | |
| 74 | Formula used | | =COLUMNS(BF68:BP73) | | | 11 | | | | | | |
| 75 | | | =ROWS(BF68:BP73) | | | 6 | | | | | | |

## Lab Work 6 (IF, NESTED IF , AND and OR Functions)

The following list shows the details of candidates for the selection of Accountants in Star Ltd.

| Application No. | Name | Sex | Age | Score Written test (out of 80) | Score Interview (Out of 20) |
|---|---|---|---|---|---|
| 101 | Manoj | Male | 25 | 65 | 18 |
| 102 | Dejesh | Male | 27 | 61 | 16 |
| 103 | Manju | Female | 21 | 70 | 17 |
| 104 | Krishna | Female | 26 | 59 | 15 |
| 105 | Kannan | Male | 31 | 69 | 14 |
| 106 | Asha | Female | 29 | 63 | 16 |
| 107 | Anjana | Female | 25 | 76 | 17 |
| 108 | Unni | Male | 26 | 73 | 18 |
| 109 | Lechu | Female | 30 | 61 | 17 |
| 110 | Deepa | Female | 22 | 66 | 18 |

By using suitable function in Calc,

(a) Find the total Score of candidates.

(b) Find the candidates who are below 25 years old and whose total score is more than 80.

(c) Find the candidates who are below 30 years old and whose, total score is more than 80 and written test score is more than 70. Those who satisfy these conditions should be displayed as "Selected" and others as "Rejected".

(d) Find the candidates who are below 25 years old or total score is more than 90 or written test score is more than 75. Those who satisfy any of these conditions should be displayed as "Eligible" and others as Not Eligible".

(e) Grade the candidates on the following basis their total score :

| | |
|---|---|
| More than 90 | - Outstanding |
| 85 to 89 | - Excellent |
| 80 to 84 | - Good |
| Less than 80 | - Average |

**Process:**

Step 1 Open LibreOffice Calc.

Step 2 Enter the data in cells from A1 to F11 as in the question.

Step 3 Select Cell G2 and enter the formula =SUM(E2,F2) to get the total of Written test and interview. Use drag and fill handle to fill the cells G3 to G11

Step 4 Select Cell H2 and enter the formula =AND(D2<25,G2>80). Use drag and fill handle to fill the cells H3 to H11

Step 5 Select Cell I2 and enter the formula =IF(AND(D2<30, G2>80, E2>70),"Selected","Rejected"). Use drag and fill handle to fill the cells I3 to I11

Step 6 Select Cell J2 and enter the formula =IF(OR(D2<25,G2>90,F2>75),"Eligible","Not Eligible"). Use drag and fill handle to fill the cells J3 to J11

Step 6 Select Cell K2 and enter the formula =IF(G2>90,"Outstanding",IF(G2>85,"Excellent",IF(G2>80,"Good","Average"))). Use drag and fill handle to fill the cells K3 to K11

**Output**

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Application No. | Name | Sex | Age | Score Written test (out of 80) | Score Interview (Out of 20) | Total Score (a) | (b) | (c) | (d) | (e) |
| 2 | 101 | Manoj | Male | 25 | 65 | 18 | 83 | FALSE | Rejected | Not Eligible | Good |
| 3 | 102 | Dejesh | Male | 27 | 61 | 16 | 77 | FALSE | Rejected | Not Eligible | Average |
| 4 | 103 | Manju | Female | 21 | 70 | 17 | 87 | TRUE | Rejected | Eligible | Excellent |
| 5 | 104 | Krishna | Female | 26 | 59 | 15 | 74 | FALSE | Rejected | Not Eligible | Average |
| 6 | 105 | Kannan | Male | 31 | 69 | 14 | 83 | FALSE | Rejected | Not Eligible | Good |
| 7 | 106 | Asha | Female | 29 | 63 | 16 | 79 | FALSE | Rejected | Not Eligible | Average |
| 8 | 107 | Anjana | Female | 25 | 76 | 17 | 93 | FALSE | Selected | Eligible | Outstanding |
| 9 | 108 | Unni | Male | 26 | 73 | 18 | 91 | FALSE | Selected | Eligible | Outstanding |
| 10 | 109 | Lechu | Female | 30 | 61 | 17 | 78 | FALSE | Rejected | Not Eligible | Average |
| 11 | 110 | Deepa | Female | 22 | 66 | 18 | 84 | TRUE | Rejected | Eligible | Good |

## Lab Work 7 (VLOOKUP)

The following table shows stock of various fabric items dealt by Minnu's Textiles.

| Product No | Brand Name | Product item | Stock (Nos.) | Price Per Unit (₹) |
|---|---|---|---|---|
| 1100 | Queen | Sarees | 125 | 1500 |
| 1101 | Lotus | Sarees | 200 | 1800 |
| 1201 | Rajas | Pants | 200 | 2500 |
| 1202 | Handsome | Pants | 150 | 1700 |
| 1301 | King | Shirt | 300 | 2200 |
| 1302 | Topper | Shirt | 200 | 1200 |
| 1303 | Jasmine | Churidar | 150 | 1000 |

Find out the following using VLOOKUP Function

a) Brand name of product No. 1101
b) Product item of product No. 1302
c) Stock of product No. 1201
d) Price of product No. 1303

**Process:**

Step-1 : Open a blank worksheet in Libre Office Calc

Step-2 : Enter the table headings in different cells as follows

| Cell | Cell Headings |
|---|---|
| A1 | Product No |
| B1 | Brand Name |
| C1 | Product item |
| D1 | Stock (Nos.) |
| E1 | Price Per Unit (₹) |

Step-3 : Enter the product details in the table from Cells A2 to E8

Step-4 : Enter the following labels in various cells

| | |
|---|---|
| B9 | Brand name of product No. 1101 |
| B10 | Product item of product No. 1302 |
| B11 | Stock of product No. 1201 |
| B12 | Price of product No. 1303 |

Enter the following formulae in various cells against the labels

| Cell | Formula |
|---|---|
| E9 | =VLOOKUP(1101,A2:E8,2,0) |
| E10 | =VLOOKUP(1302,A2:E8,3,0) |
| E11 | =VLOOKUP(1201,A2:E8,4,0) |
| E12 | =VLOOKUP(1303,A2:E8,5,0) |

***Output***

| | A | B | C | D | E |
|---|---|---|---|---|---|
| 1 | Product No. | Brand Name | Product Item | Stock (Nos.) | Price Per Unit (₹) |
| 2 | 1100 | Queen | Sarees | 125 | 1500 |
| 3 | 1101 | Lotus | Sarees | 200 | 1800 |
| 4 | 1201 | Rajas | Pants | 200 | 2500 |
| 5 | 1202 | Handsome | Pants | 150 | 1700 |
| 6 | 1301 | King | Shirt | 300 | 2200 |
| 7 | 1302 | Topper | Shirt | 200 | 1200 |
| 8 | 1303 | Jasmine | Churidar | 150 | 1000 |
| 9 | | Brand Name of product No. 1101 | | | Lotus |
| 10 | | Product item of Product No. 1302 | | | Shirt |
| 11 | | Stock of Product No. 1201 | | | 200 |
| 12 | | Price of Product No. 1303 | | | 1000 |

## Lab Work 8 (CUMIPMT Function)

Minnu Pharmaceuticals took a loan of ₹ 3,00,000 from Syndicate Bank on 1st Jan 2011 for a period of 5 years at 6% interest per annum. As per agreement, the payment is given at the end of each month. Compute the cumulative interest payable at the end of each year and also the total interest of the entire loan period by using CUMIPMT Function.

Here,

| | |
|---|---|
| Rate = (6% per annum, hence monthly rate) | = .005 (6%/12) |
| NPer (length of the loan in months) | = 60 (5x12) |
| PV (present value of loan) | = 3,00,000 |
| S is the first period. | = 1 (For 1st Year) |
| E is the last period. | = 12 (For 1nd Year) |
| Type (payment at the end of a period) | = 0 |

**Process :**

The steps to calculate cumulative interest using CUMIPMT function is as follows:

Select the cell B8 and enter the formula =CUMIPMT(B2,B3,B4,B5,B6,B7) to calculate the cumulative interest of 1st year. Apply the the same function in respective cells to find the remaining years cumulative interest.

***Output***

| | A | B | C | D | E | F | F |
|---|---|---|---|---|---|---|---|
| 1 | | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | For 5 Years |
| 2 | **Rate** | .005 | .005 | .005 | .005 | .005 | .005 |
| 3 | **Nper** | 60 | 60 | 60 | 60 | 60 | 60 |
| 4 | **PV** | 300000 | 300000 | 300000 | 300000 | 300000 | 300000 |
| 5 | **S** | 1 | 13 | 25 | 37 | 49 | 1 |
| 6 | **E** | 12 | 24 | 36 | 48 | 60 | 60 |
| 7 | **Type** | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | **Interest payable** | -₹16,557.14 | -₹13,285.69 | -₹9,812.46 | -₹6,125.01 | -₹2,210.13 | -₹47,990.43 |

## Lab Work 9 (PMT Function)

Mrs. Meera is planning to take a housing loan of ₹10,00,000 from Indian overseas bank. Annual interest rate is 7% and repayment period is 15 years. She wishes to know the amount required for payment of monthly instalment. Help her to calculate the monthly instalment using PMT function in LibreOffice Calc.

**Process :**

Steps for the calculation of monthly instalment are shown below:

The parameters are

Rate = 7% (the monthly rate is 7%/12)
Nper = 180 (15 x 12)
PV = 10,00,000 FV = 0

Enter the values Rate,Nper,PV,FV and Type into respective cells

Then select the cells to which the result is required and enter the syntax of PMT Function as shows below.

=PMT(7%/12,180,1000000,0,0) or =PMT(B2,B3,B4,B5)

should be entered in the cell B7, which will return monthly instalment of -₹8988.28

***Output***

| | A | B |
|---|---|---|
| 1 | Annual Rate | 7.00% |
| 2 | Rate (Annual rate /12) | .006 |
| 3 | Nper | 180 |
| 4 | PV | 1000000 |
| 5 | FV | 0 |
| 6 | Type | 0 |
| 7 | Monthly instalment | -₹8,988.28 |

(Negative figure is shown because it is payment.)

## Lab Work 10 (Data Series)

Construct data series using appropriate Edit menu options in the following cases-

(a) 10 to 120 with increment of 10 in A1:A12, using the Linear series option
(b) Number series 2,4,8 ....................from B1 to B12, using the Growth series option
(c) First day of every month in an year from C1 to C12, using the Date series option.

**Process:**

**(a) Making Linear data series**

Step-1: Enter the value 10 in cell A1.
Step-2: Select the range A1:A12.
Step-3: Click 'Edit' tab and and choose 'Series' from 'Fill' option.
Step-4: In the 'Fill Series' window on display select Series Type as 'Linear'.
Step-5: Give the start value as 10, Increment as 10 and click 'OK'.

**(b) Making Growth data series**

Step-1: Enter the value 2 in cell B1.
Step-2: Select the range B1:B12.
Step-3: Click 'Edit' tab and and choose 'Series' from 'Fill' option.

Step-4: In the 'Fill Series' window on display select Series Type as "Growth'.

Step-5: Give the start value as 2, Increment as 2 and click 'OK'.

**(c) Making Linear data series**

Step-1: Enter the date 1/01/2017 in cell C1.

Step-2: Select the range C1:C12.

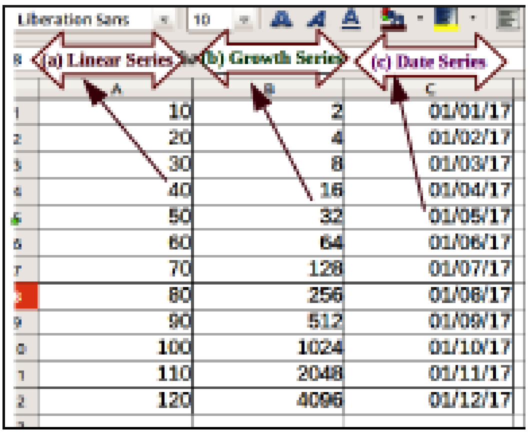
Step-3: Click 'Edit' tab and and choose 'Series' from 'Fill' option.

Step-4: In the 'Fill Series' window on display select Series Type as 'Date'. Also select 'Month' in the 'Time Unit' section of the window.

Step-5: Give the start value as 1/01/2017, Increment as 1and click 'OK'.

## *Output*

The final out put is shown below:




## Lab Work 11 (Importing data to Calc)

Create a data file using Text Editor by entering the following 'Asset_ Details'. Also import the details by opening a worksheet in LibreOffice Calc.

| Asset Name | Purchase Date | Cost price | Brokerage | Transportation | Installation charges | Scrap value | Life (years) |
|---|---|---|---|---|---|---|---|
| Machinery | 01/01/2013 | 1200000 | 15000 | 0 | 2500 | 20000 | 8 |
| Plant | 31/03/2013 | 2500000 | 200000 | 12000 | 40000 | 500000 | 12 |
| Motor car | 01/08/2013 | 140000 | 0 | 0 | 0 | 200000 | 7 |
| Furniture | 31/10/2013 | 85 000 | 0 | 3000 | 0 | 5000 | 10 |

**Process :**

Step-1: Open a new Text Editor file From Accessories in Applications.

Step-2: In the first line give the titles of the columns such as Name of Asset, Date of Purchase,Purchase price, Brokerage, Transportation, Installation charges, Scrap value and life in years, in the same sequence by separating each heading using comma.

Step-3: In the next four lines, enter the details of each asset, separated by comma in the same order of the column headings.

Step-4: Save the text file in 'Documents' or 'Desktop' by giving the name 'Asset_Details'.

Step-5: Open a new LibreOffice Calc worksheet.

Step-6: Click on 'Sheet from File' option from Insert menu. Select the text file named 'Asset_Details' with the help of dialogue box appeared and press 'Open' button.

Step-7: Click 'OK' in the Text Import -(Asset_Details)' window. Also click 'OK' on the 'Insert Sheet' window appeared in the screen.

Step-8: The details of assets are than placed from A1:H5 in the worksheet. Then,save the worksheet by giving the name 'Details of Students'.

***Output***

A1 Name of asset

| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | Name of asset | Date of purchase | Purchase price | Brokerage | Transportation | Installation charges | Scrap value | life in years |
| 2 | Machinery | 01/01/2013 | 1200000 | 15000 | 0 | 2500 | 20000 | 8 |
| 3 | Plant | 31/03/2013 | 2500000 | 200000 | 12000 | 40000 | 500000 | 12 |
| 4 | Motor car | 01/08/2013 | 1400000 | 0 | 0 | 0 | 200000 | 7 |
| 5 | Furniture | 31/10/2013 | 85000 | 0 | 3000 | 0 | 5000 | 10 |
| 6 | | | | | | | | |

## Lab Work 12 (Data Validation)

Construct a spreadsheet table showing the following details of 10 students participating in an inter-class debate competition.

(a) Serial Number

(b) Name(assume the names of 10 students)

(c) Sex

(d) Batch(Science, Commerce, Humanities)

Use data validation option for filling the 'sex' from the list and 'Batch', from the cell range.

Also set appropriate 'Input help' and 'Error alert' to be displayed at the time of data entry.

**Process:**

Step-1: Open a new LibreOffice Calc worksheet and give the title 'List of students for debate' in A1.

Step-2: Give the column headings as 'Sl. No.' in A2, 'Name' in B2, 'Sex' in C2, 'Batch' in D2.

Step-3 : Enter the Serial Number 1 to 10 in A3:A12 using the fill handle.

Step-4: Enter the names of 10 students as per your choice(Both male and Female) from B3 to B12.

Step-5: To enter the sex of students, select the area C3:C12., Then go to 'Data' manu and choose 'Validity' option. In the appeared 'Validity' window, in 'Allow' field select 'List' , and in 'Entries' field give the values 'Male', 'Female' and 'Transgender' one after another in separate line and click 'OK'. (You may set the 'Input Help' in the validity window, by giving title as 'Sex' and 'Input help' message as 'Give sex of students'. You may also set Error Alert in the validity window. The Action may be selected to 'Warning', give the Title as 'Sex' and the Error Message as 'wrong data' and click 'OK'.) Click on the arrow shown right to the validated cell for selecting the sex of each student.

Step-6: To enter batch of students, prepare a list of batches (Science, Commerce, Humanities) anywhere in the spreadsheets (for eg, in sheet 1, B13:B15), select the area D3:D12, go to 'Data'tab and choose 'Validity' option. In the appeared 'Validity' window, in 'Allow' field select 'Cell range' , and in 'Source' field insert the specific sheet and range address in which required values are available.(Eg, $Sheet 1.$B$13:$B$15) (You may also set the 'Input Help' in the validity window, by giving title as 'Batch' and Input help message as 'Give group of 'study'. You may also set Error Alert in the validity window. The Action may be selected to 'Warning', give the Title as 'Batch' and the Error Message as 'wrong entry, Correct it' and click 'OK'.) Click on the arrow shown right to the validated cell for selecting the batch of each student.

Step-7: Save the workbook by giving appropriate name.

***Output***

D12 | Science

| | A | B | C | D |
|---|---|---|---|---|
| 1 | List Students for Debate | | | |
| 2 | Sl. No. | Name | Sex | Batch |
| 3 | 1 | Ashokan | Male | Commerce |
| 4 | 2 | Benny Thomas | Male | Humanities |
| 5 | 3 | Gineesh | Male | Science |
| 6 | 4 | Sundas | Female | Commerce |
| 7 | 5 | Sareesh | Male | Humanities |
| 8 | 6 | Bindsree | Female | Science |
| 9 | 7 | Roy Joseph | Male | Humanities |
| 10 | 8 | Shija Baby | Female | Humanities |
| 11 | 9 | Rajesh Babu | Male | Commerce |
| 12 | 10 | Ramees | Male | Science |
| 13 | | Science | | |
| 14 | | Commerce | | |
| 15 | | Humanities | | |

## Lab Work 13 (Conditional Formatting)

The stock of some medicines in a Medical Shop are listed below:-

### STOCK OF MEDICINES – KRISHNA MEDICALS

| SL. NO. | NAME OF MEDICINE | NAME OF COMPANY | QUANTITY |
|---|---|---|---|
| 1 | Gluciphage Tab 250 | Franco India | 230 |
| 2 | Gluciphage Tab500 | Franco India | 45 |
| 3 | Ecosprin Tab 75 | USV | 110 |
| 4 | Ecosprin Tab 150 | USV | 240 |
| 5 | Calpol Tab 500 | Welcome | 20 |
| 6 | Calpol Tab 650 | Welcome | 40 |
| 7 | Mox Cap 250 | Rexel | 160 |
| 8 | Mox Cap 500 | Rexel | 25 |
| 9 | Amlodac Tab 10 | Cadila | 320 |
| 10 | Amlodac Tab 20 | Cadila | 46 |
| 11 | Roscillin Cap 250 | Ranbaxy | 170 |
| 12 | Roscillin Cap 500 | Ranbaxy | 165 |
| 13 | Topcid Tab 20 | Torrent | 24 |
| 14 | Topcid Tab 40 | Torrent | 48 |

This firm has the practice of placing new orders for medicines, when the stock quantity falls below 50 units. Identify the medicines which are in the re-order level and highlight them using red colour.

*(Hint: Use conditional formatting option available in LibreOffice Calc.)*

**Process :**

Step-1, Open a LibreOffice Calc worksheet and enter the given data in A1:D16

Step-2, Select the cells to which you want to apply a conditional style(ie. D3:D16)

Step-3, Choose, **Format → Conditional Formatting → Condition**

Step-4, Enter the condition into the appeared windows. In the option 'Cell Value is' select 'Less than' and in 'Apply Style' select 'New style'.

Step-5, In the appeared window, Cell Style', click on the menu item 'Back ground' and select the background colour as red. Confirm both the screens by click 'OK'.

*Output*

The formatted table will be shown as follows:-

| | A | B | C | D |
|---|---|---|---|---|
| 1 | STOCK OF MEDICINES – KRISHNA MEDICALS | | | |
| 2 | SL. NO. | NAME OF MEDICINE | NAME OF COMPANY | QUANTITY |
| 3 | 1 | Gluciphage Tab 250 | Franco India | 230 |
| 4 | 2 | Gluciphage Tab500 | Franco India | 45 |
| 5 | 3 | Ecosprin Tab 75 | USV | 110 |
| 6 | 4 | Ecosprin Tab 150 | USV | 240 |
| 7 | 5 | Calpol Tab 500 | Welcome | 20 |
| 8 | 6 | Calpol Tab 650 | Welcome | 40 |
| 9 | 7 | Mox Cap 250 | Rexel | 160 |
| 10 | 8 | Mox Cap 500 | Rexel | 25 |
| 11 | 9 | Amlodac Tab 10 | Cadila | 320 |
| 12 | 10 | Amlodac Tab 20 | Cadila | 46 |
| 13 | 11 | Roscillin Cap 250 | Ranbaxy | 170 |
| 14 | 12 | Roscillin Cap 500 | Ranbaxy | 165 |
| 15 | 13 | Topcid Tab 20 | Torrent | 24 |
| 16 | 14 | Topcid Tab 40 | Torrent | 48 |

## Lab Work 14 (One-variable Data Table)

Mr. Sukumar, a Medical representative working in a pharmaceutical company, is drawing a fixed monthly salary of ₹10,000. He is also entitled to 12% commission on sales achieved during the month. He attained the sales volume of ₹ 20,000 during the previous month. Make a One Variable Table showing his salary if monthly sales varies from ₹ 10,000 to ₹ 50,000 in multiples of ₹ 5000 .

**Process:**

Step-1: Enter the following details in a worksheet.

Commission(in A1)- 12%(in B1)

Monthly Sales(in A2)- 20000(in B2)

Salary Amount(in A3)- =10000 +B2 x B1

Step-2: In column 'C' enter given monthly sales from 10,000 to 50,000, in steps of 5000.

Step-3: Select the range C2:D10.

Step-4: Choose Data - Multiple operations. In the Formulas field give B3.In Column input cell give B2, because Monthly sales is the variable here.

Step-5: Close the dialogue box with OK.

*Output*

The One-variable data table appears as follows:-

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Commission | 12.00% | Sales(Rs.) | Salary(Rs.) |
| 2 | Monthly Sales | 20000 | 10000 | 11200 |
| 3 | Salary(Rs.) | 12400 | 15000 | 11800 |
| 4 | | | 20000 | 12400 |
| 5 | | | 25000 | 13000 |
| 6 | | | 30000 | 13600 |
| 7 | | | 35000 | 14200 |
| 8 | | | 40000 | 14800 |
| 9 | | | 45000 | 15400 |
| 10 | | | 50000 | 16000 |

## Lab Work 15 (Two-variable Data Table)

An insurance company introduced a new insurance policy to the public sector employees in the age group of 20 to 30 years. The premium should be paid up to the age of 50 years. On the date of retirement or death of the insured, the insurance company will pay double the amount of sum assured. The minimum sum assured is ₹. 50,000, policies can be taken in multiples of ₹. 10,000 and the maximum ceiling is ₹. 2,00,000. An employee with the age of 25 years taking a policy of ₹. 1,00,00 should pay yearly premium of ₹.4,000. (The premium calculation formula being 'Sum assured /50-Age of Employee'.) Construct a two-variable table showing the yearly premium to be paid by employees of different age groups for varying policy amounts.

**Process:**

Step-1 : Enter the following details in a worksheet.

| | A | B |
|---|---|---|
| 1 | Insured Sum | 100000 |
| 2 | Age of employee | 25 |
| 3 | Yearly Premium | =B1/(50-B2) |

Step-2: In column 'C' enter sum assured from 50,000 to 2,00,000, in steps of 10,000.

Step-3: From D2:N2, enter the age of employees from 20 to 30.

Step-4: select the area C2:N18.

Step-5: Choose Data - Multiple operations. In the Formulae field give B3.In the Row input cell give B2. In Column input cell give B1, Here, both the sum assured and age of employees are variables.

Step-6: Close the dialogue box with OK, then the two-variable data table will be formed.

Step-7: Round off the amounts to '0' decimal places by number formatting.

*Output*

The Two-variable data table appears as follows:

| C | D | E | F | G | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sum insured** | | | | | **Age of employees** | | | | | | |
| | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| 50000 | 1667 | 1724 | 1786 | 1852 | 1923 | 2000 | 2083 | 2174 | 2273 | 2381 | 2500 |
| 60000 | 2000 | 2069 | 2143 | 2222 | 2308 | 2400 | 2500 | 2609 | 2727 | 2857 | 3000 |
| 70000 | 2333 | 2414 | 2500 | 2593 | 2692 | 2800 | 2917 | 3043 | 3182 | 3333 | 3500 |
| 80000 | 2667 | 2759 | 2857 | 2963 | 3077 | 3200 | 3333 | 3478 | 3636 | 3810 | 4000 |
| 90000 | 3000 | 3103 | 3214 | 3333 | 3462 | 3600 | 3750 | 3913 | 4091 | 4286 | 4500 |
| 100000 | 3333 | 3448 | 3571 | 3704 | 3846 | 4000 | 4167 | 4348 | 4545 | 4762 | 5000 |
| 110000 | 3667 | 3793 | 3929 | 4074 | 4231 | 4400 | 4583 | 4783 | 5000 | 5238 | 5500 |
| 120000 | 4000 | 4138 | 4286 | 4444 | 4615 | 4800 | 5000 | 5217 | 5455 | 5714 | 6000 |
| 130000 | 4333 | 4483 | 4643 | 4815 | 5000 | 5200 | 5417 | 5652 | 5909 | 6190 | 6500 |
| 140000 | 4667 | 4828 | 5000 | 5185 | 5385 | 5600 | 5833 | 6087 | 6364 | 6667 | 7000 |
| 150000 | 5000 | 5172 | 5357 | 5556 | 5769 | 6000 | 6250 | 6522 | 6818 | 7143 | 7500 |
| 160000 | 5333 | 5517 | 5714 | 5926 | 6154 | 6400 | 6667 | 6957 | 7273 | 7619 | 8000 |
| 170000 | 5667 | 5862 | 6071 | 6296 | 6538 | 6800 | 7083 | 7391 | 7727 | 8095 | 8500 |
| 180000 | 6000 | 6207 | 6429 | 6667 | 6923 | 7200 | 7500 | 7826 | 8182 | 8571 | 9000 |
| 190000 | 6333 | 6552 | 6786 | 7037 | 7308 | 7600 | 7917 | 8261 | 8636 | 9048 | 9500 |
| 200000 | 6667 | 6897 | 7143 | 7407 | 7692 | 8000 | 8333 | 8696 | 9091 | 9524 | 10000 |

## Lab Work 16 (Pivot Table)

You are given the sales details of a supermarket dealing with different types of consumer products. Make a Pivot table showing category wise sales amount.

| | A | B | C | D |
|---|---|---|---|---|
| 1 | Bill No | Name of product | Category | Sales (₹) |
| 2 | A1 | Rose | Soap | 1300 |
| 3 | A2 | Lilly | Soap | 2500 |
| 4 | A3 | Shine teeth | Tooth paste | 3500 |
| 5 | A4 | Smile | Tooth paste | 4500 |
| 6 | A5 | Flowers | Soap | 7500 |
| 7 | A6 | Lotus | Soap | 4000 |
| 8 | A7 | Maavila | Tooth paste | 5500 |
| 9 | A8 | Magic | Soap | 3500 |
| 10 | A9 | Beauty | Talcum powder | 2500 |
| 11 | A10 | Fresh | Tooth paste | 3000 |

**Process:**

Step-1: Enter the data into spread sheet and select the data range. (A1: D11)

Step -2: Data → Pivot Table → Create

Step:3: Drag and drop the field buttons into the white areas of Pivot Table Dialogue Box as given below :

Column Fields - Category

Row Fields - Bill No. & Name of Product

Data fields - Sales (Rs.)

Step-4: Specify the range of cells in the current worksheet to set the destination of the pivot table.

(Say, E1:J13) and confirm the pivot table layout window.

***Output***

The pivot table appears as follows:-

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Sum - Sales (₹) | | Data | | | |
| 2 | Bill No | Name of product | Soap | Talcum powder | Tooth paste | **Total Result** |
| 3 | A1 | Rose | 1300 | | | **1300** |
| 4 | A10 | Fresh | | | 3000 | **3000** |
| 5 | A2 | Lilly | 2500 | | | **2500** |
| 6 | A3 | Shine teeth | | | 3500 | **3500** |
| 7 | A4 | Smile | | | 4500 | **4500** |
| 8 | A5 | Flowers | 7500 | | | **7500** |
| 9 | A6 | Lotus | 4000 | | | **4000** |
| 10 | A7 | Maavila | | | 5500 | **5500** |
| 11 | A8 | Magic | 3500 | | | **3500** |
| 12 | A9 | Beauty | | 2500 | | **2500** |
| 13 | **Total Result** | | **18800** | **2500** | **16500** | **37800** |

# Use of Spreadsheet in Business Applications

Unit 3

**Key Concepts**

3.1 Payroll accounting

3.2 Asset accounting

3.3 Loan repayment schedule

## Introduction

We have already seen that spreadsheet has numerous possibilities in the business world due to its easy manipulation and analysis of data. It also provides built-in functions for various financial and statistical operations besides basic arithmetical functions. Spreadsheets are put to use by business firms and the corporate world for varied purposes ranging from accounting to presentation of data in the form of graphs and charts for decision making.

Both large and small scale business firms use spreadsheet for the preparation of payroll, asset accounting and loan repayment schedule. Let us discuss how the above areas will come handy for the students of commerce, who can apply these skills in business.

## 3.1 Payroll Accounting

- The payroll accounting involves all aspects of paying compensation and benefits to employees. Let's examine the various components of pay with the help of the example given below.

Mr.Alen is employed as a clerk in Viswas Ltd. His Basic Pay is ₹ 23,000. His other allowances include :

| | | |
|---|---|---|
| Dearness Allowance | - | 15% of Basic Pay |
| House Rent Allowance | - | ₹ 1,500 per month |
| **Deductions:** | | |
| Life Insurance Premium | - | ₹ 1,000 per month |
| Provident Fund | - | 8% of Basic Pay |



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From the example given above, can you list out the various components of salary?

- Basic Pay
- Dearness Allowance
- HRA
-

Let us discuss the components of payroll in detail.

### 3.1.1. Payroll Components

#### Earnings

- *Basic Pay (BP)* : It is the pay in the pay scale. It is the fixed amount paid to the employees by their employers based on their work. It is the core of salary and many other components are computed based on this amount.
- *Grade Pay (GP)* : It is the pay to be added to the basic pay according to the category/designation of the employee.
- *Dearness Pay (DP)* : It is that portion of dearness allowance, which has been declared and deemed to have been merged with the basic pay.
- *Dearness Allowance (DA)* : It is a compensation to make up the purchasing power of employees due to price rise. It is granted by the Government periodically as a percentage of basic pay.
- *House Rent Allowance (HRA)* : It is an amount paid to facilitate an employee to enjoy the benefit of a residential accommodation.
- *Transport Allowance (TA)* : It is an amount paid to facilitate an employee to travel between his home and place of work.
- *Other earnings*: It may include any other earnings or allowances such as education allowance, medical allowance, washing allowance, hill tract allowance etc.

#### Deductions

- *Professional Tax (PT)* : It is the tax levied by the State on the income earned by way of profession, trade or employment. Normally it is collected by the Local Self Government Institutions under which the place of employement falls.
- *Provident Fund (PF)* : It is a statutory deduction made as part of social security. It is decided by the Government under the Employees' Provident Fund Act and is computed as a percentage of basic pay + DA.
- *Tax Deduction at Source (TDS)* : A statutory deduction made on a monthly basis towards income tax liability of an employee.
- *Recovery of Loan Instalment* : Amount of deduction on account of any loan taken by the employee such as PF loan, house loan etc. It may include interest as well as repayment of principal amount.
- *Other deductions* : It may include other deductions not included above such as recovery of advance against salary, deductions on account of festival advance, etc.

The above explanation will light up on the various components of payroll. Now we can proceed with the calculation of Gross Pay (Gross Salary) and Net Pay (Net Salary)

- Gross Pay = The total earnings of an employee before making any deductions.
  = Basic pay + Grade pay + DA + HRA + TA + Other Allowances.
- Net Pay = Amount payable to the employee after subtracting all deductions from Gross Pay
  = Gross Pay – Total deductions

Total deductions = PF + PT + TDS + Loans + other dedections

Now let us compute the Gross Pay and Net Pay of Mr. Alen, in the example given at the beginning of our discussion.

The Gross Pay of Mr.Alen will be 23000+3450(i.e. 23000 x 15%) + 1500 = ₹ 27,950

Total deductions = 1,000 +1,840 (23,000 x $\frac{8}{100}$)
= ₹ 2,840

The Net Pay of Mr. Alen will be 27,950 – 2,840
= ₹ 25,110

Here, we have seen the Salary/Pay details of an employee. Thus, the Salary/Pay details of all employees of an organisation need to be prepared in the form of a statement. Such a statement is called Payroll and the process of preparing the payroll is called Payroll Accounting.

***Basic Pay Earned (BPE)*** *– Basic Pay Earned of an employee is the Basic Pay calculated with reference to Number of Effective Days Present (NOEDP) during the month and "Number of Days in a Month" is denoted by NODM.*

*BPE = BP * NOEDP/NODM*

***Number of Effective Days Present (NOEDP)*** *– is the Number of Days in a Month Minus Leave without Pay minus Unauthorised Absence.*

i.e. NOEDP = Number of Days in a Month – (Leave without Pay + Unauthorized Absence).

### 3.1.2 Template Design in Spread Sheet

Business firms normally use designed templates of spreadsheets for payroll accounting.

- What is a template and why is it designed?

It is a predefined spreadsheet having cells or columns with integrated formulae and customised formats that works according to the instructions provided. The input and output will be consistent because of pre-programming.

Templates are very useful for repetitive tasks where we can save a lot of time. It also helps to input data with better accuracy and sharing of consistent output.

### Preparation of Payroll Statement

Let us consider the following example.

Toms Ltd. intends to prepare payroll statement of its employees for August 2017. The table 3.1 shows the details of salary and deductions of each employee under various categories.

Table 3.1 Details of Salary

| Sl. No | Name | Post | Basic pay (BP) | HRA |
|---|---|---|---|---|
| 1 | IRSHAD | Manager | 40000 | 3% of BP |
| 2 | BASIL | Technician | 30000 | 2% of BP |
| 3 | ASWIN | Driver | 25000 | Nil |

Dearness Allowance is 20% of basic pay

Deductions:

Provident Fund (PF) is 10% of Basic Pay

State Life Insurance (SLI) is ₹ 500 for all employees

Compute Gross Salary and Net Salary payable to the employees during August 2017 using spreadsheet.

Follow the given steps for the preparation of payroll statement.

1. Open a spreadsheet and enter headings in the cells A1 and A2 as shown in figure 3.1.
2. Give the column headings as Sl. No, Name, Post, BP, DA, HRA, Gross Salary, PF, SLI, Total deductions and Net from cells A9 to K9. Input the given data in the respective cells as shown in figure 3.1.

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TOMS Ltd. | | | | | | | | | | |
| 2 | PAY ROLL FOR THE MONTH OF AUGUST 2017 | | | | | | | | | | |
| 3 | Dearness Allowance | | | | 20% | | | | | | |
| 4 | HRA rate for Manager | | | | 3% | | | | | | |
| 5 | HRA rate for Technician | | | | 2% | | | | | | |
| 6 | PF rate | | | | 10% | | | | | | |
| 7 | SLI | | | | 500 | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | Sl No | Name | Post | BP | DA | HRA | Gross Salary | PF | SLI | Total Deduction | Net |
| 10 | 1 | IRSHAD | Manager | 40000 | | | | | | | |
| 11 | 2 | BASIL | Technician | 30000 | | | | | | | |
| 12 | 3 | ASWIN | Driver | 25000 | | | | | | | |
| 13 | | Total | | | | | | | | | |
| 14 | | | | | | | | | | | |

Fig 3.1 Payroll

3. Enter the following formulae in the respective cells as per the template given below.

| **Column heading** | **Cells** | **Equation** | **Formulas (syntax) to be enter in the cells** |
|---|---|---|---|
| DA | E10 | =BP * 20% | =D10*$E$3 |
| HRA | F10 | If (Post= "Manager",BP*3%,IF(Post= "Technician",BP*2%,0) | =IF(C10="Manager",D10*$E$4,IF(C10="Technician",D10*$E$5,0)) |
| Gross Salary | G10 | =BP+DA+HRA | =SUM(D10:F10) |
| PF | H10 | =BP*10% | =D10*$E$6 |
| SLI | I10 | =500 | =$E$7 |
| Total deduction | J10 | =PF+SLI | =H10+I10 |
| Net | K10 | =Gross Salary-Total Deduction | =G10-J10 |
| Total | K13 | =sum(net) | =SUM(K10:K12) |

4. Select the Range E10:K12 and press Ctrl + D or select E10:K10, and drag and fill the cells E11:K12. Then findout the total values in the 13th row and save the file. See the Payroll statement given in figure 3.2.

**Output**

K13 =SUM(K10:K12)

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | TOMS Ltd, | | | | | | | | | | |
| 2 | PAY ROLL FOR THE MONTH OF AUGUST 2017 | | | | | | | | | | |
| 3 | Dearness Allowance | | | | 20% | | | | | | |
| 4 | HRA rate for Manager | | | | 3% | | | | | | |
| 5 | HRA rate for Technician | | | | 2% | | | | | | |
| 6 | PF rate | | | | 10% | | | | | | |
| 7 | SLI | | | | 500 | | | | | | |
| 8 | | | | | | | | | | | |
| 9 | Sl No | Name | Post | BP | DA | HRA | Gross Salary | PF | SLI | Total Deduction | Net |
| 10 | 1 | IRSHAD | Manager | 40000 | 8000 | 1200 | 49200 | 4000 | 500 | 4500 | 44700 |
| 11 | 2 | BASIL | Technician | 30000 | 6000 | 600 | 36600 | 3000 | 500 | 3500 | 33100 |
| 12 | 3 | ASWIN | Driver | 25000 | 5000 | 0 | 30000 | 2500 | 500 | 3000 | 27000 |
| 13 | | Total | | 95000 | 19000 | 1800 | 115800 | 9500 | 1500 | 11000 | 104800 |
| 14 | | | | | | | | | | | |

Fig 3.2 Payroll Statement

Let us see another example.

PQR Ltd., a computer distribution company wants to prepare Payroll Statement for the month of November 2017. Various components of salary for different category of employees are given in table 3.2.

| Sl No | Name | Post | Basic pay(BP) | Grade pay | HRA | TRA | TDS | Loan recovery |
|---|---|---|---|---|---|---|---|---|
| 1 | Archana | Manager | 30000 | 1000 | 3% of BP | 150 pm | 1000 | 3000 |
| 2 | Naseem | Accountant | 20000 | 500 | 2% of BP | Nil | 300 | 1000 |
| 3 | Jubna | Supervisor | 16000 | Nil | Nil | Nil | 0 | 0 |

Table 3.2 Various components of Salary

DA is 80% of Basic Pay

### Deductions:

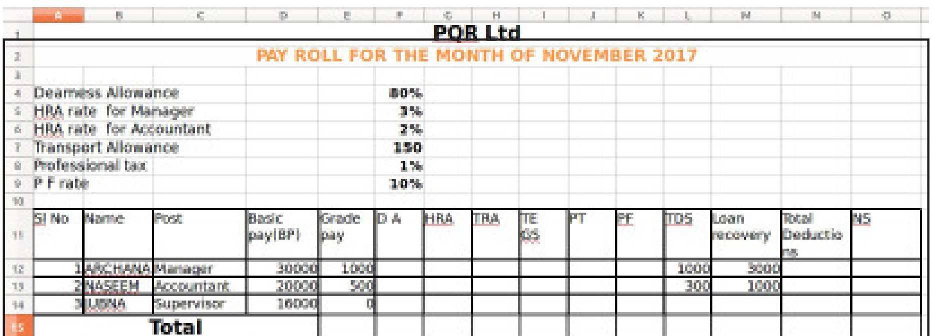
Professional Tax (PT)- 1% of gross salary for all employees

Provident Fund (PF) -10% of basic pay for all employees

Compute Gross Salary and Net Salary payable to employees for the month of November 2017 using spreadsheet.

Follow the given procedure to prepare the Payroll Statement of the company.

1. Open a new spreadsheet and enter table headings in the cells A1 and A2 .
2. Enter the column heading and input data directly in the respective cells as shown in figure 3.3



PQR Ltd

PAY ROLL FOR THE MONTH OF NOVEMBER 2017

| | |
|---|---|
| Dearness Allowance | 80% |
| HRA rate for Manager | 3% |
| HRA rate for Accountant | 2% |
| Transport Allowance | 150 |
| Professional tax | 1% |
| P F rate | 10% |

| Sl No | Name | Post | Basic pay(BP) | Grade pay | D A | HRA | TRA | TE GS | PT | PF | TDS | Loan recovery | Total Deductions | NS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ARCHANA | Manager | 30000 | 1000 | | | | | | | 1000 | 3000 | | |
| 2 | NASEEM | Accountant | 20000 | 500 | | | | | | | 300 | 1000 | | |
| 3 | JUBNA | Supervisor | 16000 | 0 | | | | | | | | | | |
| Total | | | | | | | | | | | | | | |

Fig 3.3 Payroll

3. Enter the following formulae in the respective cells as per the template given below.

| Column heading | Cells | Equation | Formulas (syntax) to be enter in the cells |
|---|---|---|---|
| DA | F12 | =BP * 80% | =D12*$F$4 |
| HRA | G12 | If (Post= “Manager",BP*3%,IF(Post= “Accountant ",BP *2%,0)) | =IF(C12="Manager",D12*$F$5 ,IF(C12="Accountant",D12*$F $6,0)) |
| TRA | H12 | If (Post= “Manager",150,0) | =IF(C12="Manager",$F$7,0) |
| TE(Total Earning) GS (gross salary) | I12 | =BPE+Grade pay+DA+HRA+TRA | =SUM(D12:H12) |
| PT | J12 | =TE*1% | =I12*$F$8 |
| PF | K12 | =BP*10% | =D12*$F$9 |
| TD total deduction | N12 | =PT+PF+TDS+LOAN | =SUM(J12:M12) |
| NS | O 12 | =TE-TD | =I12-N12 |
| Sum of Net salary for the month | O 15 | =SUM(net salary of all employees) | =SUM(O12:O14) |

4. Select the cells F12,G12,H12,I12,J12 and K12 together and drag and fill up to 14th row for relative cell reference. Then select the cells N12 and O12 together and drag and fill up to 14th row (*drag the formulae in unfilled area only of the given table*). Ascertain the total values in the 15th row and save the file. The output of payroll will look like as seen in figure 3.4.

**Output**

PQR Ltd.

PAY ROLL FOR THE MONTH OF NOVEMBER 2017

| | |
|---|---|
| Dearness Allowance | 80% |
| HRA rate for Manager | 3% |
| HRA rate for Accountant | 2% |
| Transport Allowance | 150 |
| Professional Tax | 1% |
| PF Rate | 10% |

| Sl No | Name | Post | BP | Grade Pay | DA | HRA | TRA | Gross Salary | PT | PF | TDS | Loan Recovery | Total Deduction | Net Salary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ARCHANA | Manager | 30000 | 1000 | 24000 | 900 | 150 | 56050 | 560.5 | 3000 | 1000 | 3000 | 7560.5 | 48489.5 |
| 2 | NASEEM | Accountant | 20000 | 500 | 16000 | 400 | 0 | 36900 | 369 | 2000 | 300 | 1000 | 3669 | 33231 |
| 3 | JUBINA | Supervisor | 16000 | 0 | 12800 | 0 | 0 | 28800 | 288 | 1600 | 0 | | 1888 | 26912 |
| | Total | | 66000 | 1500 | 52800 | 1300 | 150 | 121750 | 1217.5 | 6600 | 1300 | 4000 | 13117.5 | 108632.5 |

Fig 3.4 Payroll Statement

## *Let's assess*

1. *Gross Pay (Total Earnings) includes ….*

   *a. BP* *b. DP* *c. DA* *d. All of these*

2. *DA is 14% of Basic pay. The amount of Basic pay is entered in cell D2. Write the formula to be entered in cell D3 to calculate DA.*

3. *Gross salary and Total Deductions are shown in D8 and G8 respectively. Write the formula to calculate Net Salary in cell H8.*

4. *Shafi is working as a Manager in Sudo Services Ltd. His basic pay is ₹ 25000/- DA is @ 20% of basic pay and HRA is ₹ 1000/-. He is on Leave Without Allowance for 3 days during the month of August 2017. Calculate his BPE for the month of August 2017.*

## Try yourself

VISHAL Ltd. has 10 employees. The salary details of the employees are entered in a spreadsheet (figure 3.5). You are required to fill in the missing columns of this payroll statement.

**VISHAL Ltd**

PAY ROLL FOR THE MONTH OF SEPTEMBER 2017

| | |
|---|---|
| Dearness Allowance | 0.8 |
| HRA rate for Manager | 0.03 |
| HRA rate for Accountant | 0.02 |
| Transport Allowance | 150 |
| Professional tax | 0.01 |
| P F rate | 0.1 |

| Sl No | Name | Post | Basic pay(BP) | Grade pay | D A | HRA | TRA | TE GS | PT | PF | TDS | Loan recovery | Total Deductions | NS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | AKSHAY | Manager | 30000 | 1000 | | | | | | | 1000 | 3000 | | |
| 2 | IRSHAD | Accountant | 20000 | 500 | | | | | | | 200 | 1000 | | |
| 3 | AMAYA | Supervisor | 18000 | 1000 | | | | | | | 0 | 0 | | |
| 4 | BASIL | Manager | 25000 | 0 | | | | | | | 500 | 0 | | |
| 5 | ASWIN | Accountant | 12000 | 2000 | | | | | | | 500 | 0 | | |
| 6 | GOPIKA | Supervisor | 10000 | 0 | | | | | | | 0 | 500 | | |
| 7 | ABHI | Clerk | 8000 | 1500 | | | | | | | 800 | 0 | | |
| 8 | THEJA | Accountant | 14000 | 0 | | | | | | | 1200 | 0 | | |
| 9 | ATHIRA | Supervisor | 11000 | 750 | | | | | | | 0 | 2000 | | |
| 10 | ASHISH | Supervisor | 17000 | 500 | | | | | | | 1000 | 0 | | |
| | | **Total** | | | | | | | | | | | | |

Fig 3.5 Payroll Statement

While giving a formula for the above illustration, keep in mind the following;

TE=BPE+ All Allowances (DA, HRA, TRA, etc.,)

*NS= TE- Deductions (PF, TDS, Loan, etc.)*

## 3.2 Accounting of assets

Accounting of assets covers the complete life cycle of an asset. Hence records relating to assets are to be maintained right from the acquisition of asset till its disposal. It involves computation of depreciation, maintenance of asset register and preparation of fixed asset schedule for reporting in the Balance Sheet.

We are familiar with the calculation of depreciation in manual accounting. When there are different classes of assets to which rates of depreciation are varying [as per Companies Act / Income Tax Act], you can imagine how complex the calculation is.

The inbuilt functions of LibreOffice Calc makes the asset accounting process more easier.

Among the different methods of calculating depreciation, Straight Line Method and Written Down Value Method are two popularly used methods. Let us discuss about these methods.

### 3.2.1. Straight line method (Fixed Installment Method)

Here, depreciation is calculated based on the original cost of the asset using the formula;

$$\text{Depreciation} = \frac{\text{Acquisition cost - Scrap Value}}{\text{Estimated working Life}}$$

***Acquisition cost (Cost to use)*** = Purchase cost+ Installation expenses + other expenses till the date of installation.

***Scrap Value*** – It is the value which is realisable at the end of its useful life.

***Estimated working life*** – The period for which the asset can be effectively put to use.

**SLN** function is used for finding out the amount of annual depreciation under straight line method.

**Syntax : = SLN(Cost, Salvage, Life)**

Where,

Cost = Acquisition cost

Salvage = Scrap value

Life = Total life period of an asset

Consider the following example,

The cost of machinery is ₹ 10,000 and installation charges ₹ 1000/-. The salvage value after 5 years is ₹ 2,000/-. See how depreciation is calculated using SLN function in LibreOffice Calc.

Total cost of the asset = Procurement cost + installation charges

= 10000 + 1000 = ₹ 11,000/-

The amount of depreciation can be calculated easily by using SLN function in LibreOffice Calc in cell B2 as **=SLN(11000,2000,5)**. The above function returns the annual depreciation amount as ₹ 1,800 (See figure 3.6).

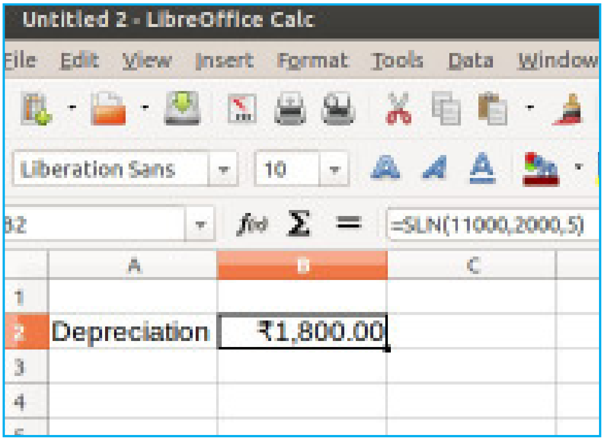



Fig 3.6 SLN Function

Let us consider another example.

Roopam Ltd. purchased various assets on 01/04/2016. Calculate the amount of depreciation and Written Down Value of assets at the end of the year, under Straight Line Method of charging depreciation (Table 3.3).

Table 3.3 Details of assets

| Sl. No | Asset name | Asset ID | Purchase cost | Installation expense | Pre-operation expense | Salvage value | Life in years |
|---|---|---|---|---|---|---|---|
| 1 | Machinery | 101 | 600000 | 20000 | 10000 | 70000 | 10 |
| 2 | Furniture | 102 | 100000 | 0 | 0 | 10000 | 15 |
| 3 | Fixtures | 103 | 50000 | 30000 | 10000 | 5000 | 20 |
| 4 | Vehicles | 104 | 200000 | 0 | 0 | 20000 | 10 |

The following steps are required for finding the result as shown in figure 3.7.

1 Enter table heading in the cells A1 and A2 in a worksheet

2 Input the necessary data in the respective cells as given in the figure 3.7

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ROOPAM LTD. | | | | | | | | | | |
| 2 | Calculation of depreciation for the financial year 2016-17 under Straight Line Method | | | | | | | | | | |
| 3 | Sl.No. | Asset Name | Asset ID | Purchase cost | Installation expense | Pre-operation expense | Cost to use | Salvage value | Life in years | Amount of Depreciation | Closing balance of Asset |
| 4 | 1 | Machinery | 101 | 600000 | 20000 | 10000 | | 70000 | 10 | | |
| 5 | 2 | Furniture | 102 | 100000 | 0 | 0 | | 10000 | 15 | | |
| 6 | 3 | Fixtures | 103 | 50000 | 30000 | 10000 | | 5000 | 20 | | |
| 7 | 4 | Vehicles | 104 | 200000 | 0 | 0 | | 20000 | 10 | | |

3. Enter the following formulas in the respective cells as per template given below.

| Column heading | Cell Address | Equation used | Formula in cell |
|---|---|---|---|
| Cost to use | G4 | Purchase cost + Installation expense+ Pre-operation expense | =D4+E4+F4 |
| Amount of depreciation | J4 | SLN(Cost,Salvage,Life) | =SLN(G4,H4,I4) |
| Closing balance of assets | K4 | Cost to use - Amount of depreciation | =G4 – J4 |
| Total depreciation during 2016-17 (for all assets) | J8 | SUM(Amount of depreciation) | =SUM(J4:J7) |
| Net Block (Total closing balance of all asset) | K8 | SUM(Closing balance of asset) | =SUM(K4:K7) |

4. Use fill handle to copy the formula to other cells or Drag the cell G4 up to G7 and J4 : K4 up to J7 : K7.

5. The formula when applied in J8 will give us total depreciation. Similarly values of net block can be derived in K8 when the above formula is given and save the file.(Figure 3.8).

**Output**

J4 =SLN(G4,H4,I4)

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ROOPAM LTD. | | | | | | | | | | |
| 2 | Calculation of depreciation for the financial year 2016-17 under Straight Line Method | | | | | | | | | | |
| 3 | Sl.No. | Asset Name | Asset ID | Purchase cost | Installation expense | Pre-operation expense | Cost to use | Salvage value | Life in years | Amount of Depreciation | Closing balance of Asset |
| 4 | 1 | Machinery | 101 | 600000 | 20000 | 10000 | 630000 | 70000 | 10 | 56000 | 574000 |
| 5 | 2 | Furniture | 102 | 100000 | 0 | 0 | 100000 | 10000 | 15 | 6000 | 94000 |
| 6 | 3 | Fixtures | 103 | 50000 | 30000 | 10000 | 90000 | 5000 | 20 | 4250 | 85750 |
| 7 | 4 | Vehicles | 104 | 200000 | 0 | 0 | 200000 | 20000 | 10 | 18000 | 182000 |
| 8 | Total Depreciation during the year 2016-17 | | | | | | | | | 84250 | 935750 |

Fig - 3.8 - Asset Accounting

## Try yourself

1. ABC Ltd. purchased a machine on 01-01-2017 for ₹ 2,00,000 and spends ₹ 10,000 for its installation. The machinery was installed on 10-01-2017. The expected salvage value is ₹ 8,000 at the end of its useful life of 10 years. Calculate annual depreciation under Straight Line Method (SLM) using spreadsheet.

2. Given below are the details of various assets of a firm. Calculate depreciation under Straight Line Method using spreadsheet.

| Asset | Cost of Purchase | Installation charges | Transportation charges | Pre-operating expense | Salvage value | Life in years |
|---|---|---|---|---|---|---|
| Machinery | 20000 | 2000 | 4600 | 1200 | 2000 | 10 |
| Furniture | 40000 | 3500 | 1500 | 500 | 3000 | 8 |

### 3.2.2. Written Down Value (WDV) Method

It is also called Reducing Balance Method or Declining Balance (DB) Method or Diminishing Balance Method. This method uses current book value as the base for computing the depreciation for the next period. Under this method depreciation is calculated on opening balance of asset each year. DB function is used for calculating depreciation under this method.

Syntax: **= DB(Cost, Salvage, Life, Period, month)**

Where,

**Cost** = Acquisition cost

**Salvage** = Scrap value

**Life** = Life (in years) of the asset.

**Period** = Period (year) for which depreciation is calculated.

**Month** = number of months in the first year. (It is required only if the asset is put to use during part of an year in the first year of its commissioning.)

Consider the following example:

A machinery is purchased on 1st August 2014 for ₹ 40,000 and installation charges is ₹ 2,000. The salvage value after 5 years will be ₹ 3,000. Ascertain the amount of depreciation of third year using DB function in Calc., assuming that the books are closed on 31st March every year.

Cost - ₹ 42,000 (₹ 40,000 + ₹ 2,000)

Salvage - ₹ 3,000

Life - 5

Period - 3

Months - 8 (from 1/8/2014 to 31/3/2015)

Enter the formula in cell B2 = **DB(42000, 3000,5,3,8)**.

On applying this function, the cell will return the amount of depreciation as ₹ 7,382.79 (Figure 3.9)

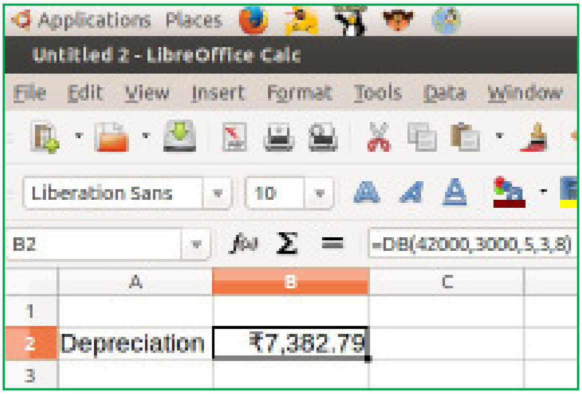



Fig 3.9 DB Function

Let us see one more example:

The table 3.4 shows the details of fixed assets purchased by Gayathri Ltd. Calculate the amount of depreciation and the Written down value of assets at the end of the year 2016-17 (i.e. after 2 years of purchase).

Table 3.4 Details of fixed assets

| Sl. No | Asset name | Purchase date | Purchase cost | Installation expense | Pre-operation expense | Salvage value | Life in years |
|---|---|---|---|---|---|---|---|
| 1 | Machinery | 1/5/2015 | 600000 | 20000 | 10000 | 70000 | 10 |
| 2 | Furniture | 1/6/2015 | 100000 | 0 | 0 | 10000 | 15 |
| 3 | Fixtures | 1/4/2015 | 50000 | 30000 | 10000 | 5000 | 20 |
| 4 | Vehicles | 1/7/2015 | 200000 | 0 | 0 | 20000 | 10 |

The following steps are required for preparing the statement showing depreciation.

1 Enter table heading in the cells A1 and A2 by merging the cells of a worksheet.

2 Enter the column headings and input the given data as shown in figure 3.10.

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GAYATHRI LTD. | | | | | | | | | | | | |
| 2 | Calculation of depreciation for the financial year 2016-17 under Diminishing Balance Method | | | | | | | | | | | | |
| 3 | Sl. No. | Asset Name | Purchase Date | Purchase cost | Installation expense | Pre-operation expense | Cost to use | Salvage value | Life in years | Period for which depreciation is to be computed | Remaining months in the first year | Amount of Depreciation | Closing balance of Asset |
| 4 | 1 | Machinery | 01/05/2015 | 600000 | 20000 | 10000 | | 70000 | 10 | 2 | | | |
| 5 | 2 | Furniture | 01/06/2015 | 100000 | 0 | 0 | | 10000 | 15 | 2 | | | |
| 6 | 3 | Fixtures | 01/04/2015 | 50000 | 30000 | 10000 | | 5000 | 20 | 2 | | | |
| 7 | 4 | Vehicles | 01/07/2015 | 200000 | 0 | 0 | | 20000 | 10 | 2 | | | |
| 8 | | Total Depreciation during the year 2016-17 | | | | | | | | | | | |

Fig 3.10 Asset Accounting

*[Note:column "J" and "K" can be calculated by using IF & AND function but here it is directly entered in to the respective columns.]*

* *The Value of column 'J' indicate the period of depreciation to be computed, say 1 year, 2 year, etc.*

* *Column 'K' indicates the number of months the asset was actually held in that year.*

3. Enter the following formulae in the respective cells as per the template given below:

| Column heading | Cell Address | Equation used | Formula in cell |
|---|---|---|---|
| Cost to use | G4 | Purchase cost + Installation expense+ Pre-operation expense | =D4+E4+F4 |
| Amount of depreciation | L4 | DB(Cost,Salvage,Life,Period,month) | =DB(G4,H4,I4,J4,K4) |
| Closing balance of assets | M4 | Cost to use - Amount of depreciation | =G4 – L4 |
| Total depreciation during 2016-17 (for all assets) | L8 | SUM(Amount of depreciation) | =SUM(L4:L7) |
| Net Block(Total closing balance of all asset) | M8 | SUM(Closing balance of asset) | =SUM(M4:M7) |

4. For copying the formula to other cells use fill handle or drag the cell from G4 to G7. Select L4 : M4 and drag to L7:M7. Ascertain the total depreciation and total value of all assets in the respective columns as per the formula given above and save the file.(See figure 3.11)

**Output**

L4 =ROUND(DB(G4,H4,I4,J4,K4),0)

| | A | B | C | D | E | F | G | H | I | J | K | L | M |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | GAYATHRI LTD. | | | | | | | | | | | | |
| 2 | Calculation of depreciation for the financial year 2016-17 under Diminishing Balance Method | | | | | | | | | | | | |
| 3 | Sl. No. | Asset Name | Purchase Date | Purchase cost | Installation expense | Pre-operation expense | Cost to use | Salvage value | Life in years | Period for which depreciation is to be computed | Remaining months in the first year | Amount of Depreciation | Closing balance of Asset |
| 4 | 1 | Machinery | 01/05/2015 | 600000 | 20000 | 10000 | 630000 | 70000 | 10 | 2 | 11 | 101698 | 5,28,302 |
| 5 | 2 | Furniture | 01/06/2015 | 100000 | 0 | 0 | 100000 | 10000 | 15 | 2 | 10 | 12520 | 87,480 |
| 6 | 3 | Fixtures | 01/04/2015 | 50000 | 30000 | 10000 | 90000 | 5000 | 20 | 2 | 12 | 10510 | 79,490 |
| 7 | 4 | Vehicles | 01/07/2015 | 200000 | 0 | 0 | 200000 | 20000 | 10 | 2 | 9 | 34835 | 1,65,165 |
| 8 | Total Depreciation during the year 2016-17 | | | | | | | | | | | 159563 | 8,60,437 |

Fig 3.11 Asset accounting

### 3.2.3. Schedule forming part of the Balance Sheet

As part of balance sheet we have to prepare a schedule showing gross block, accumulated depreciation and net block

The following was extracted from the books of Ragam Ltd. The rate of depreciation is 10% per annum. Prepare a schedule showing gross block, accumulated depreciation and net block as on 31st March 2017.

| SL No. | Asset name | as on 1-04-2016 | Additions on Sept 30$^{th}$ | Deductions on Sept 30$^{th}$ |
|---|---|---|---|---|
| 1 | Machinery | 100000 | 20000 | 5000 |
| 2 | Furniture | 50000 | 5000 | 2000 |
| 3 | Fixtures | 20000 | 6000 | 3000 |
| 4 | Building | 200000 | 0 | 0 |
| 5 | Vehicles | 40000 | 3000 | 1000 |

The following steps are required to prepare the schedule:

1. Enter table heading in the cells A1 and A2.
2. Label the column headings and input the data as shown in the figure 3.12

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RAGAM LTD | | | | | | | | | | |
| 2 | Schedule of forming part of the balance sheet as on 31/03/2017 | | | | | | | | | | |
| 3 | | | Gross Block | | | | Depreciation | | | | Net Block |
| 4 | Sl No | Asset Name | As on 01-04-2016 | Additions on Sept 30th | Deductions | As on 31/03/2017 | As on 01-04-2016 | Additions on Sept 30th | Deductions | As on 31/03/2017 | As on 31/03/2017 |
| 5 | 1 | Machinery | 100000 | 20000 | 5000 | | | | | | |
| 6 | 2 | Furniture | 50000 | 5000 | 2000 | | | | | | |
| 7 | 3 | Fixtures | 20000 | 6000 | 3000 | | | | | | |
| 8 | 4 | Building | 200000 | 0 | 0 | | | | | | |
| 9 | 5 | Vehicles | 40000 | 3000 | 1000 | | | | | | |
| 10 | | Total | | | | | | | | | |

Fig 3.12 Schedule of Assets

3. Enter the following formulae in the respective cells as per table given below:

| Column heading | Cells | Required Equation | Formulas in cells |
|---|---|---|---|
| Gross Block As on 31/03/17 | F5 | Block assets as on 1-04-2016+ Additions on Sept 30th – Deductions | =C5+D5-E5 |
| Depreciation as on 1-04-2016 | G5 | Gross Block As on 1-04-2016 date*10% | =C5 * 0.1 |
| Depreciation of Additions on Sept 30th | H5 | Additions on Sept 30th * 10%* 6/12 | =D5 * .1 * 6/12 |
| Depreciation on Deductions as on Sept 30 th | I5 | Deduction as Sept 30th * 10% * 6/12 | =E5*0.1 *6/12 |
| Total depreciation as on 31/03/17 | J5 | Depreciation as on 1-04-2016 + Depreciation for Additions on Sept 30th – Depreciation for Deductions on Sept 30th | =G5+H5-I5 |
| Net Block As on 31/03/17 | K5 | Gross Block As on 31/03/2017 - Depreciation as on 31/03/2017 | =F5 - J5 |

4. Select the cells F5 to K9, click fill down from edit tab or use <CTRL> + D button. Use SUM function to arrive at the totals in cells C10 to K10 and save the file.(See figure 3.13)

**Output**

| | A | B | C | D | E | F | G | H | I | J | K |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | RAGAM LTD | | | | | | | | | | |
| 2 | Schedule of forming part of the balance sheet as on 31/03/2017 | | | | | | | | | | |
| 3 | | | Gross Block | | | | Depreciation | | | | Net Block |
| 4 | Sl No | Asset Name | As on 01-04-2016 | Additions on Sept 30th | Deductions | As on 31/03/2017 | As on 01-04-2016 | Additions on Sept 30th | Deductions | As on 31/03/2017 | As on 31/03/2017 |
| 5 | 1 | Machinery | 100000 | 20000 | 5000 | 115000 | 10000 | 1000 | 250 | 10750 | 104250 |
| 6 | 2 | Furniture | 50000 | 5000 | 2000 | 53000 | 5000 | 250 | 100 | 5150 | 47850 |
| 7 | 3 | Fixtures | 20000 | 6000 | 3000 | 23000 | 2000 | 300 | 150 | 2150 | 20850 |
| 8 | 4 | Building | 200000 | 0 | 0 | 200000 | 20000 | 0 | 0 | 20000 | 180000 |
| 9 | 5 | Vehicles | 40000 | 3000 | 1000 | 42000 | 4000 | 150 | 50 | 4100 | 37900 |
| 10 | | Total | 410000 | 34000 | 11000 | 433000 | 41000 | 1700 | 550 | 42150 | 390850 |

Fig 3.13 Schedule of Assets

**POINTS TO REMEMBER**

Acquisition cost (Cost to use)=Purchase cost+ Installation expenses+ pre-operation expenses.

SLN function used for calculating depreciation under Straight Line Method.

Syntax of SLN : = SLN(Cost,Salvage,Life)

DB function used for calculating depreciation under Diminishing Balance Method

Syntax of DB : = DB(Cost,Salvage,Life,Period,Month)

Net Block= Gross block - Accumulated depreciation

## Try yourself

1. *A machinery was purchased on 1 st April 2013 for ₹ 2,00,000. Its estimated life is 10 years with salvage value of ₹ 20,000. Accounting year is 1st April to 31st March every year. Calculate depreciation under the Diminishing Balance method for 5 years in spread sheet.*

2. *The following are the details of plant and machinery. Ascertain depreciation under Written Down Value method using spreadsheet.*

| Name of Asset | PLANT & MACHINERY |
|---|---|
| Date of Purchase | 10/07/2012 |
| Date of installation | 20/07/2012 |
| Cost | ₹ 4,00,000 |
| Installation Cost | ₹50,000 |
| Pre-operating cost | ₹ 20,000 |
| Salvage Value | ₹ 10,000 |
| Expected Life of Asset | 10 years |
| Closure of Accounts | 31/03/2013 |
| Period | 1st year |

## 3.3. LOAN REPAYMENT SCHEDULE

In order to tide over the financial constraints, individuals, may depend on loans from banks or other financial institutions. Similar situation may arise in business also. Loan is a sum of money borrowed for a specific period. This liability will carry interest at a prescribed rate. These loans are to be repaid either in lump sum or in instalments along with interest over the loan repayment period.

- How can we compute the total liability including interest on a loan?
- How can we fix the Equated Monthly Instalments[EMI] ?

## Equated Monthly Instalment (EMI) Calculation

Equated monthly instalment is a fixed amount payable by a borrower to a lender at a specified date of each calender month. The EMI of a loan is determined by factors like, principal amount (actual sum of money borrowed), rate of interest, loan tenure and method of computation.

Let us see the procedure for preparing an EMI calculation statement showing interest, installment amount, period of loan, etc.

PMT function available in Calc can be used for calculating periodic instalments.

Let us go through an example.

Punjab National Bank has given loans to their customers for diverse needs. Loan amount, date of loan and rate of interest is given in the following table. Compute monthly installment amount on each loan given by the bank.

| Name of customer | Date of loan | Loan amount ₹ | Period of loan | Rate of interest |
|---|---|---|---|---|
| SARATH | 1/4/2013 | 500000 | 3 | 11% |
| NANDAN | 1/1/2012 | 800000 | 4 | 12% |
| SRIDYA | 1/7/2011 | 400000 | 5 | 09% |
| NIMNA | 1/5/2014 | 300000 | 2 | 13% |
| ROBIN | 1/9/2013 | 100000 | 3 | 12% |

The following steps will lead you to the preparation of a loan repayment schedule.

1. Assign suitable headings in cells A1 and A2 and merge and centre cells A1 to H1 and A2 to H2.
2. Enter the column labels and input the data in the respective cells as shown in figure 3.14.

Punjab National bank

Loan Repayment Schedule

| Name of customer | Date of loan | Loan amount | Period of loan | Rate of interest | Future value | Yearly instalment | Monthly instalment |
|---|---|---|---|---|---|---|---|
| SARATH | 1/4/2013 | 500000 | 3 | 0.11 | 0 | | |
| NANDAN | 1/1/2012 | 800000 | 4 | 0.12 | 0 | | |
| SRIDYA | 1/7/2011 | 400000 | 5 | 0.09 | 0 | | |
| NIMNA | 1/5/2014 | 300000 | 2 | 0.13 | 0 | | |
| ROBIN | 1/9/2013 | 100000 | 3 | 0.12 | 0 | | |

Fig 3.14 Loan Repayment Schedule - EMI Calculation

3. Enter the following formulae in the respective cells as per the table given below:

| Column heading | Cells | Equation | Formulas in cells |
|---|---|---|---|
| Yearly installment | G5 | =PMT(rate,Nper,PV,FV,Type) | =PMT(E4,D4,C4,F4,0) |
| Monthly installment | H5 | =PMT(rate/12,Nper*12,PV,FV,Type) | =PMT(E4/12,D4*12,C4,F4,0) |

4. Select cells G4 : H4 and drag and fill the cells G5:H8 and save the file.(See figure 3.15)

**Output**

H4 =PMT(E4/12,D4*12,C4,F4,0)

| Punjab National bank | | | | | | | |
|---|---|---|---|---|---|---|---|
| loan Repayment schedule | | | | | | | |
| Name of customer | Date of loan | Loan amount | Period of loan | Rate of interest | Future value | Yearly instalment | Monthly instalment |
| SARATH | 1/4/2013 | 500000 | 3 | 0.11 | 0 | 204607 | 16369 |
| NANDAN | 1/1/2012 | 800000 | 4 | 0.12 | 0 | 263388 | 21067 |
| SRIDYA | 1/7/2011 | 400000 | 5 | 0.09 | 0 | 102837 | 8303 |
| NIMNA | 1/5/2014 | 300000 | 2 | 0.13 | 0 | 179845 | 14263 |
| ROBIN | 1/9/2013 | 100000 | 3 | 0.12 | 0 | 41635 | 3321 |

Fig - 3.15 - Loan Repayment Schedule

### Try yourself

Mr. Lalu took a loan of ₹ 2,00,000 from a Indian bank, at an interest of 10% per annum. The loan is repayable over a period of 10 years in equated monthly installments .Prepare a loan repayment schedule by showing outstanding balances for the first year.

## Preparation of Loan Repayment Schedule

The Loan Repayment Schedule is a complete table of periodic loan repayments, showing the amount of principal and interest components in each instalment until the loan is fully paid off. This schedule also shows the outstanding balance of loan amount after the payment of each instalment. It is also called Loan Amortization Schedule. The payment will be made in Equated Monthly Instalments (EMI), the interest component forms the major portion in initial periods and the principal component forms major portion in later periods. The totals of interest, principal and amount paid are also depicted in this schedule.

For splitting the instalment into the interest and principal, we may use IPMT and PPMT functions respectively. The principal amount in the periodic instalment is deducted from the opening balance for arriving at the closing balance. The opening balance of each month will be the closing balance of the previous month.

**POINTS TO REMEMBER**

Functions used for the preparation of Loan Repayment Schedule.

PMT function used for calculating equated monthly instalment

=PMT(Rate,Nper, PV, FV, Type)

PPMT function used for the calculating Principal portion in the instalment

=PPMT(Rate, Period, Nper,PV, FV,Type)

IPMT function used for calculating Interest portion in the instalment

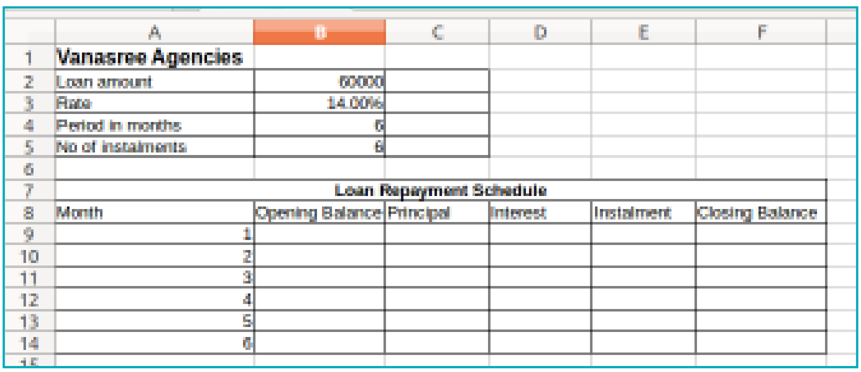
=IPMT(Rate, Period,Nper,PV, FV, Type)

Consider the following example

Vanasree Agencies took an advance of ₹ 60,000 for 6 months from Indian Bank @ 14% interest for that period. Prepare a Loan Repayment Schedule.

Steps for the preparation of Loan repayment schedule is given below:

1. Enter the headings in cells A1 and A7 as shown in figure 3.16.
2. Enter the details in respective cells as shown in figure 3.16.



| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Vanasree Agencies | | | | | |
| 2 | Loan amount | 60000 | | | | |
| 3 | Rate | 14.00% | | | | |
| 4 | Period in months | 6 | | | | |
| 5 | No of instalments | 6 | | | | |
| 6 | | | | | | |
| 7 | Loan Repayment Schedule | | | | | |
| 8 | Month | Opening Balance | Principal | Interest | Instalment | Closing Balance |
| 9 | 1 | | | | | |
| 10 | 2 | | | | | |
| 11 | 3 | | | | | |
| 12 | 4 | | | | | |
| 13 | 5 | | | | | |
| 14 | 6 | | | | | |

Fig 3.16 Loan Repayment Schedule

3. Enter the formulae in respective cells as shown below:

| | | | |
|---|---|---|---|
| A9:A14 | 1 to 6 | B9 | =B2 |
| C9 | =PPMT($B$3/$B$5,A9,$B$4,$B$2,0,0) | D9 | =IPMT($B$3/$B$5,A9,$B$4,$B$2,0,0) |
| E9 | =PMT($B$3/$B$5,$B$4,$B$2) | F9 | =B9+C9 |
| B10 | =F9 | C15 | =SUM(C9:C14) |
| D15 | =SUM(D9:D14) | E15 | =SUM(E9:E14) |

4. Select B10 and drag up to B 14
5. Select cells C9:F9 and drag upto the cells C14:F14 and save the file. The output will be as shown in the figure 3.17.

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | **Vanasree Agencies** | | | | | |
| 2 | Loan amount | 60000 | | | | |
| 3 | Rate | 14.00% | | | | |
| 4 | Period in months | 6 | | | | |
| 5 | No of instalments | 6 | | | | |
| 6 | | | | | | |
| 7 | | | **Loan Repayment Schedule** | | | |
| 8 | Month | Opening Balance | Principal | Interest | Instalment | Closing Balance |
| 9 | 1 | 60000 | -₹9,432.36 | -₹1,400.00 | -₹10,832.36 | ₹50,567.64 |
| 10 | 2 | ₹50,567.64 | -₹9,652.45 | -₹1,179.91 | -₹10,832.36 | ₹40,915.19 |
| 11 | 3 | ₹40,915.19 | -₹9,877.67 | -₹954.69 | -₹10,832.36 | ₹31,037.52 |
| 12 | 4 | ₹31,037.52 | -₹10,108.15 | -₹724.21 | -₹10,832.36 | ₹20,929.37 |
| 13 | 5 | ₹20,929.37 | -₹10,344.01 | -₹488.35 | -₹10,832.36 | ₹10,585.37 |
| 14 | 6 | ₹10,585.37 | -₹10,585.37 | -₹246.99 | -₹10,832.36 | ₹0.00 |
| 15 | | Total | -₹60,000.00 | -₹4,994.15 | -₹64,994.15 | |
| 16 | | | | | | |

Fig 3.17 Loan Repayment Schedule

**Output**

## Try yourself

DC industries took a 6 months advance of ₹ 30,000/- @ 15% for the period and repayable in 6 equal instalments. Prepare the Loan Repayment Schedule.

## Summary

- Payroll is a statement or schedule showing various components and various deductions of salary of all employees in a business organization. DA, HRA, TA, etc., are earnings and PF, Loan, GIS etc., are deductions. Net pay can be calculated by subtrating total deductions from Gross earnings.
- Depreciation accounting is used to estimate the amount of depreciation charged to an asset and closing balance of asset. The two important methods for calculating depreciation are Straight Line Method and Diminishing Balance Method . The financial function used for this purpose is SLN and DB respectively.
- Loan Repayment schedule is the schedule showing interest, total liability, instalment, etc. This schedule is prepared with the help of PMT function.

## I can

- describe the concept of payroll accounting and apply the knowledge in the development of spreadsheet application for computing employee's gross pay and net pay.
- narrate the concept of Computerised Asset Accounting and apply the knowledge in the development of Spread sheet application for computing depreciation under Straight Line Method and Written Down Value method.
- describe the concept of calculating interest and repayment of loan and apply the knowledge in the development of Loan Repayment Schedule using spreadsheet.

## TE QUESTIONS

1. Which financial function is used for preparing a loan repayment schedule?
2. State the financial function used for calculating Straight Line method of depreciation?
3. Write the equation used for finding gross salary and net salary, if Basic pay, DA, HRA, PF and SLI are given as salary components and deductions..
4. Write the syntax for following functions

   SLN, DB, PMT
5. Describe various components of salary and deductions in relation to payroll accounting.

## PE QUESTIONS

1. Salary details of Vertex Ltd, a bag manufacturing company is given below. Prepare payroll statement for the month of Aug 2017. Also ascertain total net salary payable for this month.

| Sl No | Name | Post | Basic pay (BP) | Grade pay | HRA | TA |
|---|---|---|---|---|---|---|
| 1 | Kareeb | CEO | 50000 | 2000 | 3% of BP | 200 p m |
| 2 | Bhama | Manager | 40000 | 1500 | 2% of BP | 100 p m |
| 3 | Jinu | Foreman | 22000 | Nil | 1% of BP | Nil |
| 4 | Panchami | Manager | 38000 | 2000 | 2% of BP | 100 p m |
| 5 | Harshad | Foreman | 20000 | 1000 | 1% of BP | Nil |
| 6 | Shahsin | Foreman | 15000 | Nil | 1% of BP | Nil |

DA is 20% of basic pay.
Deduction from salary are :-
Professional tax (PT)- 1% of gross salary for all employees.
Provident Fund (PF) -10% of basic pay for all employees.

2. Viswas Ltd. purchased various assets . Calculate the amount of depreciation at the end of the year 2016-17 as per the details below under Straight Line Method and Diminishing Balance Method.

| Sl No | Asset Name | Purchase date | Purchase cost | Installation expense | Pre-operation expense | Salvage value | Life in years |
|---|---|---|---|---|---|---|---|
| 1 | Machinery | 1/1/2015 | 800000 | 30000 | 50000 | 100000 | 12 |
| 2 | Furniture | 1/1/2015 | 500000 | 0 | 0 | 20000 | 14 |
| 3 | Fixtures | 1/1/2015 | 100000 | 10000 | 20000 | 10000 | 8 |
| 4 | Vehicles | 1/1/2015 | 300000 | 0 | 0 | 40000 | 15 |
| 5 | Loose tools | 1/1/2015 | 20000 | 0 | 0 | 1000 | 5 |

3. The following details are taken from the books of SBT, Kalpetta regarding an outstanding loan . Compute monthly installment on each loan given by the bank.

| Name of customer | Date of loan | Loan amount | Period of loan | Rate of interest |
|---|---|---|---|---|
| Harsha Vardhan | 1/1/2011 | 700000 | 5 | 0.09 |
| Shiny | 1/1/2013 | 50000 | 3 | 0.11 |
| Abin L | 1/9/2010 | 350000 | 6 | 0.14 |
| Ajeesh Billy | 1/12/2009 | 520000 | 7 | 0.13 |
| Clenz Geoge | 1/11/2012 | 250000 | 4 | 0.15 |

# APPENDIX

## *Lab work - 1 ( Payroll Accounting)*

Wale Ltd. wants to prepare payroll of its employees for the month of November 2017. The details of salary and deductions of each employee under various categories are given in the table.

| Sl. No. | Name | Post | Basic pay (BP) | Grade pay | HRA | TA | No. of days not worked | Deduction -TDS | Deduction- Loan recovery |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Remesh | Manager | 30000 | 1000 | 3% of BP | 150 pm | 2 | 1000 | 3000 |
| 2 | Joseph | Accountant | 20000 | 500 | 2% of BP | Nil | 3 | 300 | 1000 |
| 3 | Hisham | Supervisor | 16000 | Nil | Nil | Nil | 1 | 0 | 0 |

DA is 80% of basic pay earned (BPE)

Other deduction from salary is given bellow:-

Professional tax (PT)- 1% of gross salary for all employees.

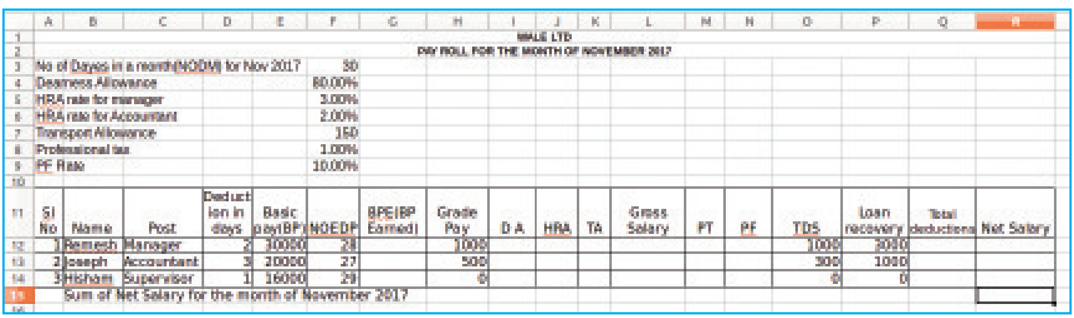
Provident Fund (PF) -10% of basic pay earned (BPE) for all employees.

Compute gross salary and net salary payable byWale Ltd. for each employee in for the month of November 2017 using spreadsheet.

## Procedure:

Follow the steps given below.

1. Give suitable headings by merging cells A1 and A2.
2. Provide column headings and input the given data directly in the respective cells (see figure 3.18)



WALE LTD
PAY ROLL FOR THE MONTH OF NOVEMBER 2017

| | |
|---|---|
| No of Dayas in a month(NODM) for Nov 2017 | 30 |
| Dearness Allowance | 80.00% |
| HRA rate for manager | 3.00% |
| HRA rate for Accountant | 2.00% |
| Transport Allowance | 150 |
| Professional tax | 1.00% |
| PF Rate | 10.00% |

| Sl No | Name | Post | Deduction in days | Basic pay(BP) | NOEDP | BPE(BP Earned) | Grade Pay | D A | HRA | TA | Gross Salary | PT | PF | TDS | Loan recovery | Total deductions | Net Salary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Remesh | Manager | 2 | 30000 | 28 | | 1000 | | | | | | | 1000 | 3000 | | |
| 2 | Joseph | Accountant | 3 | 20000 | 27 | | 500 | | | | | | | 300 | 1000 | | |
| 3 | Hisham | Supervisor | 1 | 16000 | 29 | | 0 | | | | | | | 0 | 0 | | |
| | Sum of Net Salary for the month of November 2017 | | | | | | | | | | | | | | | | |

Fig 3.18 Payroll

3. Enter the following formulae in the respective cells as per template given below.

| Column heading | Cells | Required Equation | Formulas (syntax) to be enter in the cells |
|---|---|---|---|
| NOEDP (No of Effective days present) | F12 | NODM- Deduction days (NODM means Number Of Days in the Month) | =$F$3-D12 |
| BP Earned (BPE) | G 12 | BP*NOEDP/NODM | =E12*F12/$F$3 |
| DA | I 12 | BPE * 80% | =G12*$F$4 |
| HRA | J 12 | If (Post= “Manager",BPE*3%,IF(Post= “Accountant ",BPE *2%,0)) | =IF(C12="Manager",G12*$F$5,IF (C12="Accountant",G12*$F$6,0)) |
| TA | K12 | If (Post= “Manager",150,0) | =IF(C12="Manager",F$7,0) |
| Gross Salary | L12 | BPE+Grade pay+DA+HRA+TA | =SUM(G12:K12) |
| PT | M12 | Gross Salary *1% | =L12*$F$8 |
| PF | N12 | BPE*10% | =G12*$F$9 |
| Total deductions | Q12 | PT+PF+TDS+LOAN | =SUM(M12:P12) |
| Net Salary | R12 | Gross Salary – Total Deductions | =Round(L12-Q12,0) |
| Sum of Net salary for the month | R15 | Sum net salary of all employees | =SUM(R12:R14) |

4. Select and drag the cells F12,G12,I12,J12,K12,L12,M12,N12,Q12 and R12. Up to 14th row (drag the formulae in Unfilled area only of the given table). Then find out the total values in the 15th row and save the file. The output is shown in figure 3.19.

[illegible] LTD

PAY ROLL FOR THE MONTH OF NOVEMBER 2017

| | |
|---|---|
| No of Dayes in a month(NODM) for Nov 2017 | 30 |
| Dearness Allowance | 80.00% |
| HRA rate for manager | 3.00% |
| HRA rate for Accountant | 2.00% |
| Transport Allowance | 150 |
| Professional tax | 1.00% |
| PF Rate | 10.00% |

| Sl No | Name | Post | Deduction in days | Basic pay(BP) | NOEDP | BPE(BP Earned) | Grade Pay | D A | HRA | TA | Gross Salary | PT | PF | TDS | Loan recovery | Total deductions | Net Salary |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Ramesh | Manager | 2 | 30000 | 28 | 28000 | 1000 | 22400 | 840 | 150 | 52390 | 524 | 2800 | 1000 | 3000 | 7324 | 45066 |
| 2 | Joseph | Accountant | 3 | 20000 | 27 | 18000 | 500 | 14400 | 360 | 0 | 33260 | 333 | 1800 | 300 | 1000 | 3433 | 29827 |
| 3 | Hisham | Supervisor | 1 | 16000 | 29 | 15467 | 0 | 12373 | 0 | 0 | 27840 | 278 | 1547 | 0 | 0 | 1825 | 26015 |
| | Sum of Net Salary for the month of November 2017 | | | | | | | | | | | | | | | | 100908 |

Fig 3.19 Payroll Statement

***Lab work 2 (Depreciation - SLN Function)***

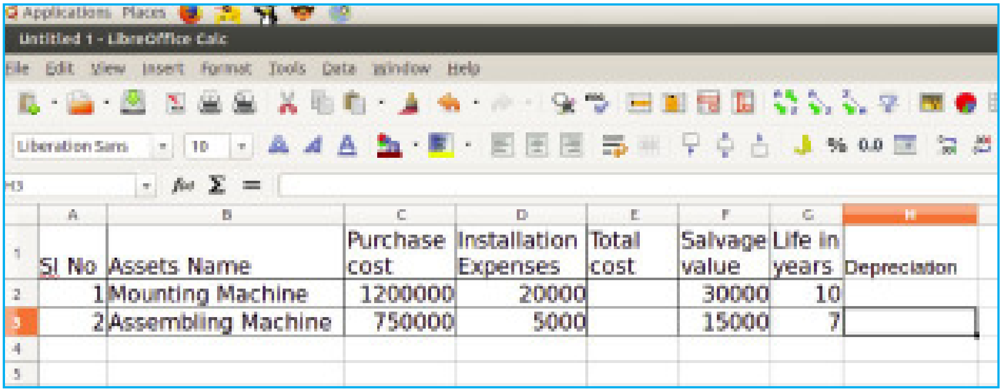
Calculate depreciation of the assets given below for the financial year 2016-17 under Straight Line Method.

| Sl No | Asset name | Purchase cost | Installation expenses | Salvage value | Life in years |
|---|---|---|---|---|---|
| 1 | Mounting Machine | 12,00,000 | 20,000 | 30,000 | 10 |
| 2 | Assembling Machine | 7,50,000 | 5,000 | 15,000 | 7 |

## Procedure

Follow the steps mentioned below.

1. Enter column heading and insert values directly in the respective cells as given in figure 3.20.



| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | Sl No | Assets Name | Purchase cost | Installation Expenses | Total cost | Salvage value | Life in years | Depreciation |
| 2 | 1 | Mounting Machine | 1200000 | 20000 | | 30000 | 10 | |
| 3 | 2 | Assembling Machine | 750000 | 5000 | | 15000 | 7 | |

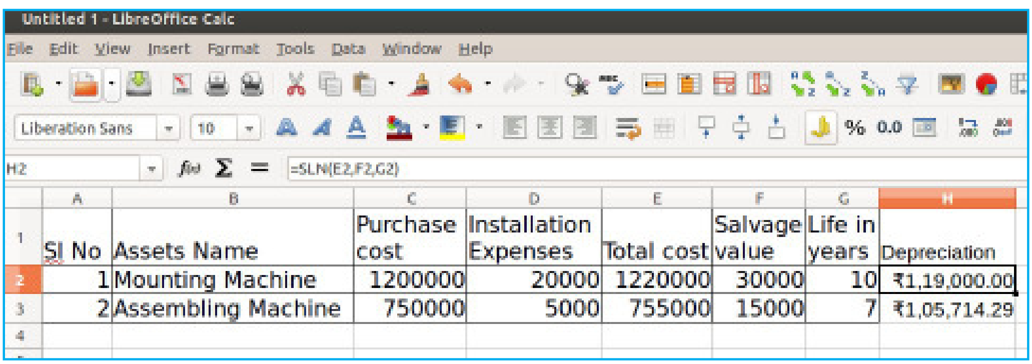
Fig 3.20 Depreciation Statement

2. Following formulae are to be entered in the respective cells as per template given below. Calculate total cost and amount of depreciation.

| Column heading | Cells | Equation | Formulas to be entered in the cells |
|---|---|---|---|
| Total cost | E2 | Purchase cost + Installation Expenses | = C2+D2 |
| Depreciation | H2 | SLN(Cost,Salvage,Life) | =SLN(E2,F2,G2) |

3. Copy cell E2 to E3 and Cell H2 to H3. The output will be as shown in figure 3.21.

## Output



| | A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|---|
| 1 | Sl No | Assets Name | Purchase cost | Installation Expenses | Total cost | Salvage value | Life in years | Depreciation |
| 2 | 1 | Mounting Machine | 1200000 | 20000 | 1220000 | 30000 | 10 | ₹1,19,000.00 |
| 3 | 2 | Assembling Machine | 750000 | 5000 | 755000 | 15000 | 7 | ₹1,05,714.29 |

Fig 3.21 Depreciation Statement

### *Lab work 3 (Depreciation - DB function)*

Calculate depreciation for the following assets for the financial year ending 31st March 2018 under Diminishing Balance Method using spreadsheet.

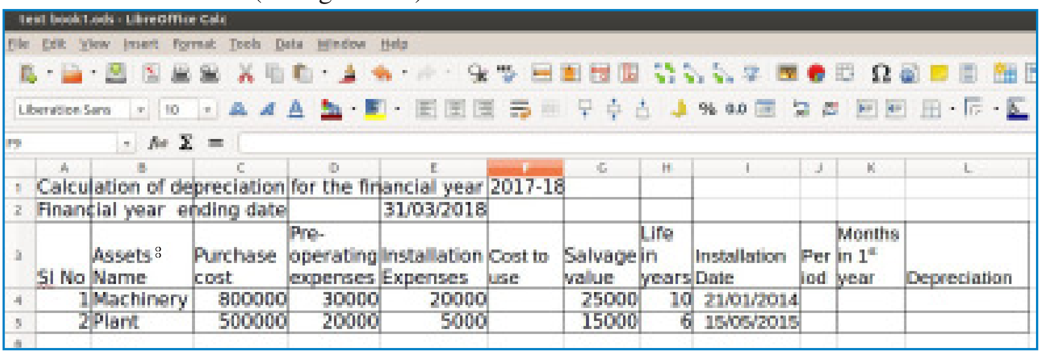
| Sl. No | Asset Name | Purchase date | Installation Date | Purchase cost | Pre-operating expenses | Installation Expenses | Salvage value | Life in years |
|---|---|---|---|---|---|---|---|---|
| 1 | Machinery | 19-01-2014 | 21-01-2014 | 8,00,000 | 30,000 | 20,000 | 25,000 | 10 |
| 2 | Plant | 06-05-2015 | 15-05-2015 | 5,00,000 | 20,000 | 5,000 | 15,000 | 6 |

## Procedure

Follow the given steps for calculating depreciation under WDV Method

1 Open a spreadsheet and enter table heading in the cells A1 and A2.

2 Enter the column heading from A3 to L3 and input values directly in the respective cells.(See figure 3.22)



| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Calculation of depreciation for the financial year 2017-18 | | | | | | | | | | | |
| 2 | Financial year ending date | | | | 31/03/2018 | | | | | | | |
| 3 | Sl No | Assets Name | Purchase cost | Pre-operating expenses | Installation Expenses | Cost to use | Salvage value | Life in years | Installation Date | Period | Months in 1st year | Depreciation |
| 4 | 1 | Machinery | 800000 | 30000 | 20000 | | 25000 | 10 | 21/01/2014 | | | |
| 5 | 2 | Plant | 500000 | 20000 | 5000 | | 15000 | 6 | 15/05/2015 | | | |

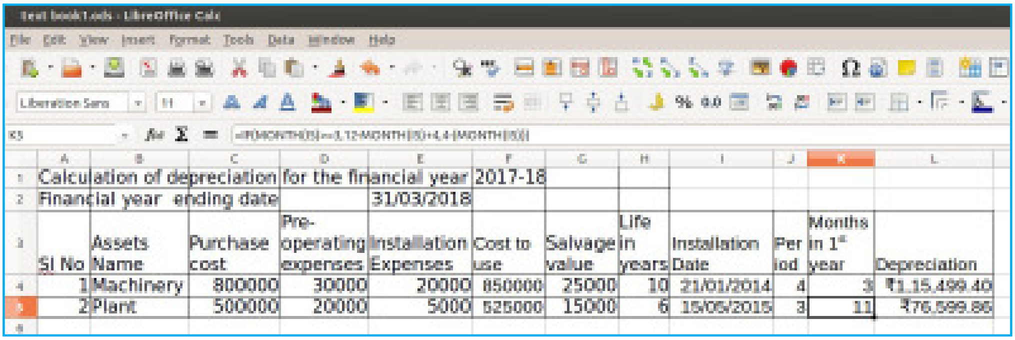
Fig 3.22 Depreciation Statement

3. Enter the following formulae in the respective cells as per table given below.

| Column heading | Cells | Equation | Formulae to be entered in the cells |
|---|---|---|---|
| Financial year ending date | E2 | | 31/03/2018 |
| Cost to use | F4 | Purchase cost + Installation Expenses + Pre-operating Expenses | = C4+D4+E4 |
| Period | J4 | Closing financial year – Installation Year | =YEAR($E$2)-YEAR(I4) |
| Months in 1st Year | K4 | Total months used in first year | =IF(MONTH(I4)>=3,12-MONTH(I4)+4, 4-(MONTH(I4))) |
| Depreciation | L4 | = DB(Cost, Salvage, Life, Period, Month) | =DB(F4,G4,H4,J4,K4) |

4. Copy the cell F4 to F5 and cells J4:L4 to J5:L5 (drag the formulae in unfilled area only of the given table) and save the file. The output will be as shown in figure 3.23.

## Output



| | A | B | C | D | E | F | G | H | I | J | K | L |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Calculation of depreciation for the financial year 2017-18 | | | | | | | | | | | |
| 2 | Financial year ending date | | | | 31/03/2018 | | | | | | | |
| 3 | Sl No | Assets Name | Purchase cost | Pre-operating expenses | Installation Expenses | Cost to use | Salvage value | Life in years | Installation Date | Per iod | Months in 1st year | Depreciation |
| 4 | 1 | Machinery | 800000 | 30000 | 20000 | 850000 | 25000 | 10 | 21/01/2014 | 4 | 3 | ₹1,15,499.40 |
| 5 | 2 | Plant | 500000 | 20000 | 5000 | 525000 | 15000 | 6 | 15/06/2015 | 3 | 11 | ₹76,599.86 |

Fig 3.23 Depreciation statement

## *Lab work 4 (Loan Repayment Schedule)*

Krishna Associates Ltd. took the following loans for the acquisition of different assets. Prepare a loan repayment schedule for the company

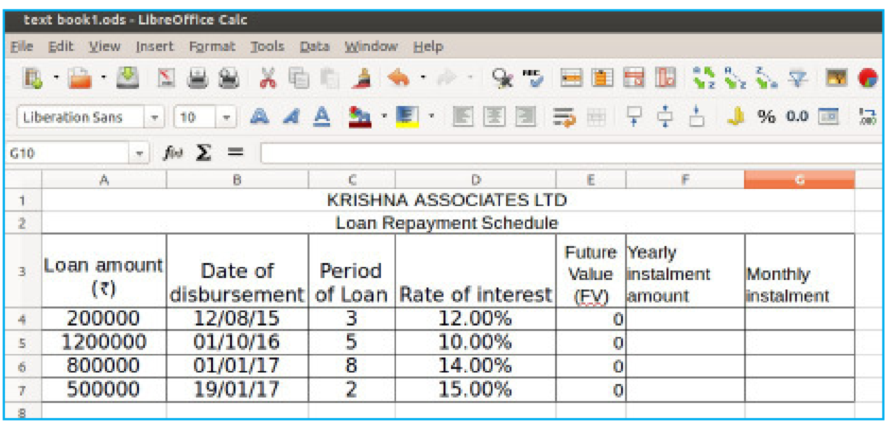
| Loan amount (₹) | Date of Loan | Period of Loan | Rate of Interest |
|---|---|---|---|
| ₹ 2,00,000 | 12/8/2015 | 3 | 12% |
| ₹ 12,00,000 | 01/10/2016 | 5 | 10% |
| ₹ 8,00,000 | 01/01/2017 | 8 | 14% |
| ₹ 5,00,000 | 19/01/2017 | 2 | 15% |

## Procedure

The steps given are to be followed:

1 Open a spreadsheet and enter headings in cells A1 and A2.

2 Give column heading and enter values directly in the respective cells.(See figure 3.24)



| | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| 1 | KRISHNA ASSOCIATES LTD | | | | | | |
| 2 | Loan Repayment Schedule | | | | | | |
| 3 | Loan amount (₹) | Date of disbursement | Period of Loan | Rate of interest | Future Value (FV) | Yearly instalment amount | Monthly instalment |
| 4 | 200000 | 12/08/15 | 3 | 12.00% | 0 | | |
| 5 | 1200000 | 01/10/16 | 5 | 10.00% | 0 | | |
| 6 | 800000 | 01/01/17 | 8 | 14.00% | 0 | | |
| 7 | 500000 | 19/01/17 | 2 | 15.00% | 0 | | |

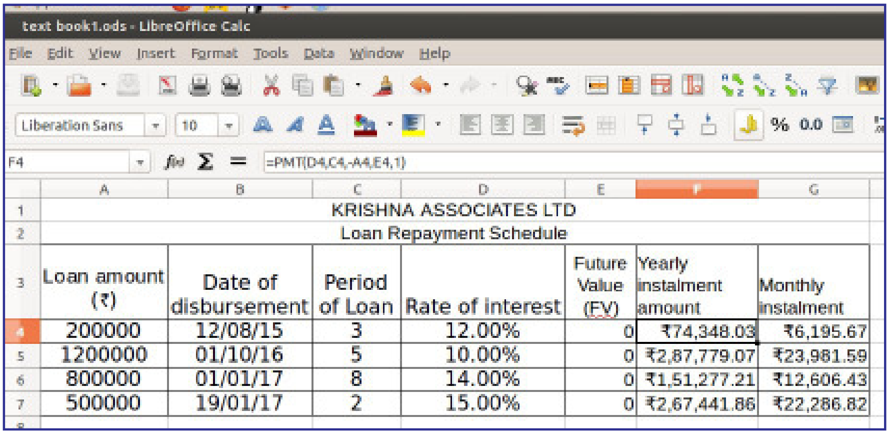
Fig 3.24 Loan Repayment Schedule

3. Enter the following formulae in the respective cells as per the given table.

| Column heading | Cells | Equation | Formulae to be entered in the cells |
|---|---|---|---|
| Yearly Installment Amount | F4 | = PMT(Rate, Nper, PV, FV, Type) | =PMT(D4,C4,-A4,E4,1) |
| Monthly Installment | G4 | = Yearly Installment Amount/12 | =F4/12 |

4. Drag the cells F4 : G4 to F7 : G7 (drag the formulae only in the Unfilled area of the given table). Now loan repayment schedule will be displayed in figure 3.25.

## Output




KRISHNA ASSOCIATES LTD

Loan Repayment Schedule

| Loan amount (₹) | Date of disbursement | Period of Loan | Rate of interest | Future Value (FV) | Yearly instalment amount | Monthly instalment |
|---|---|---|---|---|---|---|
| 200000 | 12/08/15 | 3 | 12.00% | 0 | ₹74,348.03 | ₹6,195.67 |
| 1200000 | 01/10/16 | 5 | 10.00% | 0 | ₹2,87,779.07 | ₹23,981.59 |
| 800000 | 01/01/17 | 8 | 14.00% | 0 | ₹1,51,277.21 | ₹12,606.43 |
| 500000 | 19/01/17 | 2 | 15.00% | 0 | ₹2,67,441.86 | ₹22,286.82 |

Fig 3.25 Loan Repayment Schedule

## Lab work 5

Vinayaka Saree Designers took a loan amounting to ₹ 1,00,000/- from SBI for a period of 1 year with an interest @12% p.a. and repaid in 12 equal monthly instalments. Prepare Loan Repayment Schedule.

1. Enter the detials in a Spread Sheet as shown in figure 3.26.

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Vinayaka Saree Designers | | | | | |
| 2 | Loan amount | 100000 | | | | |
| 3 | Rate | 12.00% | | | | |
| 4 | Period in year | 1 | | | | |
| 5 | No of instalments in an year | 12 | | | | |
| 6 | | | | | | |
| 7 | Loan Repayment Schedule | | | | | |
| 8 | Month | Opening Balance | Principal | Interest | Instalment | Closing Balance |
| 9 | 1 | 100000 | | | | |
| 10 | 2 | | | | | |
| 11 | 3 | | | | | |
| 12 | 4 | | | | | |
| 13 | 5 | | | | | |
| 14 | 6 | | | | | |
| 15 | 7 | | | | | |
| 16 | 8 | | | | | |
| 17 | 9 | | | | | |
| 18 | 10 | | | | | |
| 19 | 11 | | | | | |
| 20 | 12 | | | | | |

Fig 3.26 Loan Repayment Schedule

2. Enter the formula in respective cells as per template given below.

| Cell Address | Content |
|---|---|
| A9:A20 | 1 to 12 |
| B9 | =B2 |
| C9 | =PPMT($B$3/$B$5,A9,$B$4*$B$5,$B$2,0,0) |
| D9 | =IPMT($B$3/$B$5,A9,$B$4*$B$5,$B$2,0,0) |
| E9 | =PMT($B$3/$B$5,$B$4*$B$5,$B$2) |
| F9 | =B9+C9 |
| B10 | =F9 |
| C21 | =SUM(C9:C20) |
| D21 | =SUM(D9:D20) |
| E21 | =SUM(E9:E20) |

3. Select cell B10, then drag to B20, and Select C9 : F9 and drag to C20 : F20.

Save the file. The output will be as shown in figure 3.27.

## Output

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | Vinayaka Saree Designers | | | | | |
| 2 | Loan amount | 100000 | | | | |
| 3 | Rate | 12.00% | | | | |
| 4 | Period in year | 1 | | | | |
| 5 | No of instalments in an year | 12 | | | | |
| 6 | | | | | | |
| 7 | Loan Repayment Schedule | | | | | |
| 8 | Month | Opening Balance | Principal | Interest | Instalment | Closing Balance |
| 9 | 1 | 100000 | -₹7,884.88 | -₹1,000.00 | -₹8,884.88 | ₹92,115.12 |
| 10 | 2 | ₹92,115.12 | -₹7,963.73 | -₹921.15 | -₹8,884.88 | ₹84,151.39 |
| 11 | 3 | ₹84,151.39 | -₹8,043.36 | -₹841.51 | -₹8,884.88 | ₹76,108.03 |
| 12 | 4 | ₹76,108.03 | -₹8,123.80 | -₹761.08 | -₹8,884.88 | ₹67,984.23 |
| 13 | 5 | ₹67,984.23 | -₹8,205.04 | -₹679.84 | -₹8,884.88 | ₹59,779.19 |
| 14 | 6 | ₹59,779.19 | -₹8,287.09 | -₹597.79 | -₹8,884.88 | ₹51,492.11 |
| 15 | 7 | ₹51,492.11 | -₹8,369.96 | -₹514.92 | -₹8,884.88 | ₹43,122.15 |
| 16 | 8 | ₹43,122.15 | -₹8,453.66 | -₹431.22 | -₹8,884.88 | ₹34,668.49 |
| 17 | 9 | ₹34,668.49 | -₹8,538.19 | -₹346.68 | -₹8,884.88 | ₹26,130.30 |
| 18 | 10 | ₹26,130.30 | -₹8,623.58 | -₹261.30 | -₹8,884.88 | ₹17,506.72 |
| 19 | 11 | ₹17,506.72 | -₹8,709.81 | -₹175.07 | -₹8,884.88 | ₹8,796.91 |
| 20 | 12 | ₹8,796.91 | -₹8,796.91 | -₹87.97 | -₹8,884.88 | ₹0.00 |
| 21 | | Total | -₹1,00,000.00 | -₹6,618.55 | -₹1,06,618.55 | |

Fig 3.27 Loan Repayment Schedule

UNIT 4

# GRAPHS AND CHARTS FOR BUSINESS DATA

*Key Concepts*



## Introduction

We know that huge volume of data is processed by different departments of an organisation and these data have to be presented in the form of reports to various stakeholders.

For instance, the sales volume of four different products of a company for the last five years is given. It will not give a clear picture on:

- Which product is performing well?
- In which year the sales volume is higher?

How can we present these data in a more meaningful and intelligent manner? Think in terms of displaying the information in charts and graphs! Graphs and charts help us to convey information tactfully and promote interpretation of data. This also facilitates comparison and understanding changes over a period of time. You are already aware of the basic features of spreadsheet and its use in accounting. In this unit, we will discuss how spreadsheet can be used to present the raw data in the form of charts and graphs.

## 4.1 GRAPHS AND CHARTS

The term graphs and charts are often used synonymously. Let us try to bring some clarity on this. Graphs are mainly used to represent variation in values over a period of time. e.g., movement of stock market index say, NIFTY from the year 2000 to

2017. Here time (year) is represented on X axis and value (NIFTY) is represented in Y axis. Charts are used to give information about the frequency of different quantities in a single pictorial representation, for instance, budget allocation to different heads. See figure 4.1. The figure given in the left represents graph and that given in the right is chart.

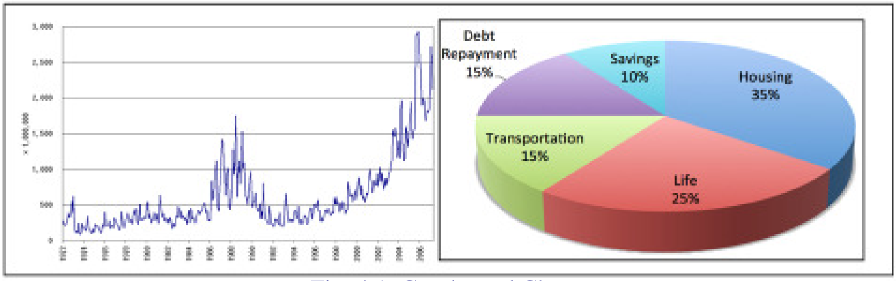



Fig 4.1 Graphs and Charts

## Types of Graphs and Charts

LibreOffice Calc provides various types of charts to display data in different ways as per the need of the users. We can create a new chart or change the existing chart from the wide range of chart types. The chart types are illustrated with the help of given example.

The sales figure of different products of an electronic goods manufacturing firm for a particular month is given below:

Laptop- 12,000, Desktop-10,000, Tablets - 14,000 & Mobile phones - 4,000.

- **Column Chart**

Column charts are used to compare several items in a specific range of values. Column charts are ideal if you need to compare a single category of data (sales) among individual sub-items(products). Data is represented through bar diagrams with vertical bars. The height of each bar is proportional to its value. The X - axis shows categories of products and the Y - axis shows the value for each category, i.e in column chart, categories are displayed horizontally and values are displayed vertically, as can be seen in figure 4.2

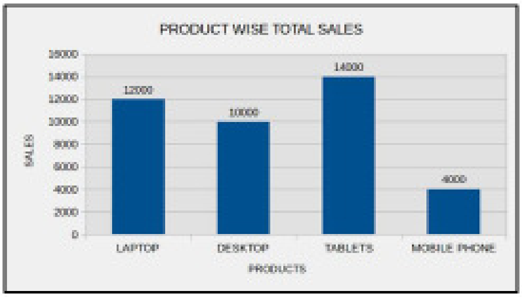



Fig 4.2 Column Chart

- **Bar Chart**

Bar charts are ideal for visualising the distribution or proportion of data items when there are different categories. Bar charts with horizontal bars are the most suitable form to visualise these data. The length of each bar is proportional to its value. The Y - axis shows

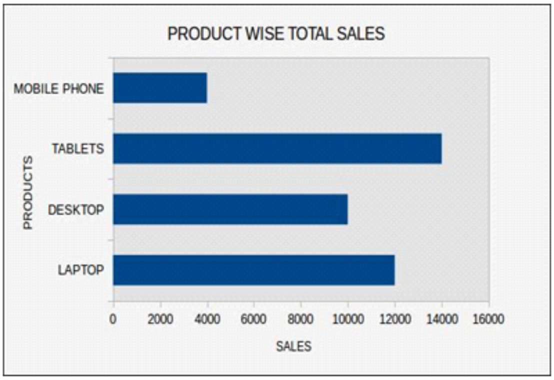



Fig 4.3 Bar chart

categories of products. The X - axis shows the value for each category (figure 4.3). Both the Bar and the Column charts display data using rectangular bars where the length of the bar is proportional to the data value. Both are used to compare two or more values. However, their difference lies in their orientation. A Bar Chart is oriented horizontally whereas the Column chart is oriented vertically.

- **Line Chart / Graph**

It is used to display trends over a period of time which can be used as a vertical analysis tool. The values of each data series can be connected by a line as shown in figure 4.4. It is also called a 'run chart'.

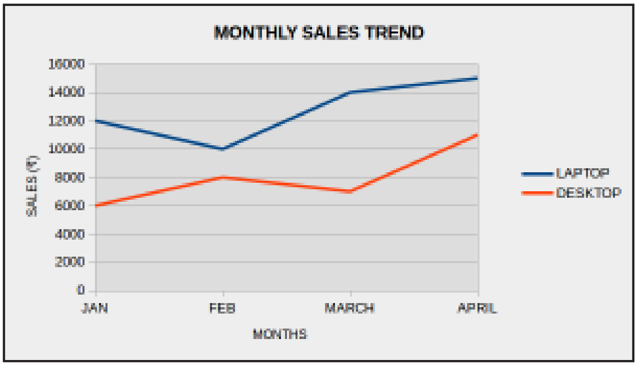



Fig 4.4 Line chart

- **Pie Chart**

Pie charts are generally used to show percentage or proportional data when one element of data is having more significance (compositional importance) than the other and usually the percentage represented by each category is provided next to the corresponding slice of pie. It contains only one data series. A pie chart shows values as circular sectors of the total circle. The length of the arc or the area of each sector is proportional to its value. The pie chart has the following chart sub types:

a) **Normal Pie Chart** :This sub type of pie chart shows sectors as coloured areas of the total pie for one data column only (Figure 4.5).

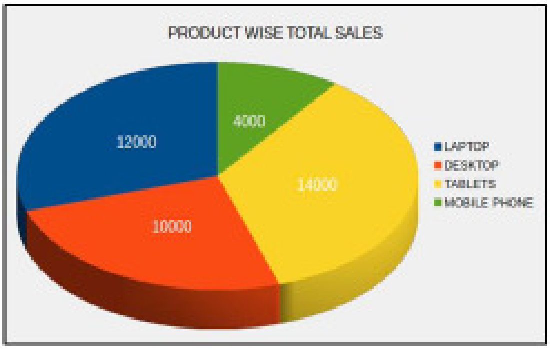



Fig 4.5 Normal Pie Chart

b) **Exploded Pie Chart** : It is a kind of pie chart in which one or several slices are separated from the other. It is useful because it makes the highlighted portion more visible (Figure 4.6).


Fig 4.6 Exploded pie Chart

c) **Donut Chart** : A Donut or Doughnut chart is a pie chart, with two exceptions: It has a hole in the middle and it can display more than one series of data. Doughnut charts display data in rings, where each ring represents a data series. The first data series is displayed in the centre of the chart (Figure 4.7).


Fig 4.7 Donut Chart

d) **Exploded Donut Chart** : It is a Donut chart with all slices exploded. It shows the outer sectors already separated from the remaining Donut (Figure 4.8).


Fig 4.8 Exploded Donut Chart

- **Area Chart**

Area chart shows values as points on the Y axis. The X axis shows categories. The values of each data series are connected by a line. The area bounded by the lines is filled with a colour. The area chart's focus is to emphasise the changes from one category to the next. Area Charts are like Line Charts except that the area below the plot line is solid (Figure 4.9).

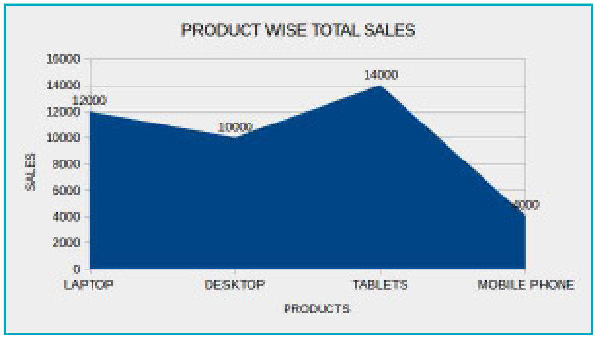



Fig 4.9 - Area Chart

- **XY (Scatter) Chart**

XY charts are also known as Scatter charts. The point of difference between XY charts and other types of charts is that in XY charts both axis display values. Such type of charts is generally used to show the relationship among two variables. It is commonly used for scientific, statistical, and engineering data. A typical XY chart is presented in figure 4.10.

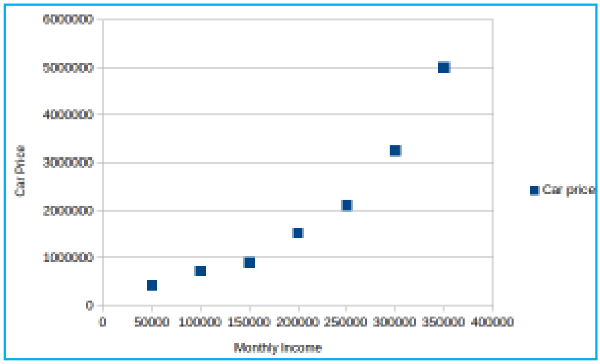



Fig 4.10 XY Chart

- **Radar Chart**

A Radar chart is a two dimensional chart showing three or more variables in the form of a cobweb. It is also known as net chart, web chart, spider chart, star chart, polar chart etc. It has a separate axis for each variable, and the axes extend outward from the centre of the chart. The value of each data point is plotted on the corresponding axis as shown in figure 4.11.


Fig 4.11 Radar Chart

**Utility of different types of charts**

| | |
|---|---|
| Area Chart | An area chart is generally used to highlight the proportion of individual items over total items. |
| Column Chart | A column chart is used to emphasise comparison of data items within a specified time period. |
| Line Chart | A line chart is a type of graph that displays data trends at regular intervals |
| Scatter Chart | It depicts the relationship among numerical values across different data series. |
| Pie Chart | The main purpose of the pie chart is to show part-whole relationships. |
| Bar Chart | A bar chart is used to demonstrate comparison among individual items. |
| Net Chart | A net chart is used for comparing the actual with standards and to analyse the degree of variances. |

## Let's assess

Select the chart type that best suits for the data given below:

| Nature of Data | Chart/ Diagram that best suits |
|---|---|
| Sales performance of Product 'A' against Product 'B' in 5 regions | ? |
| Individual product sales as a percentage of whole revenue. | ? |
| Total sales of the company over a period of 15 years | ? |
| Relation between advertisement and sales | ? |

## 4.2. Steps to Create Graph / Chart

As we discussed earlier, data when visually presented enables clear understanding and is more appealing. Creating charts/graphs is not a cumbersome task in LibreOffice Calc. Navigating through the steps given, you can easily master this skill.

1. **Open LibreOffice Calc**

   Applications → Office → LibreOffice Calc.

2. **Data entry**

   Input the necessary data into spreadsheet manually or we can import the data from other sources.

3. **Data selection**

   Select the cells which contain the data where chart is to be prepared. Here we can select the entire data or a part of the data as per our requirement by using 'Ctrl key' and 'the mouse'.

**4. Plotting the chart**

To plot the chart in a spreadsheet, click on Insert menu , select the Chart option from the menu, choose a chart type from the chart wizard. Select 'finish' button. (Figure 4.12)

Insert → Chart → Chart Wizard → Chart Type → Finish

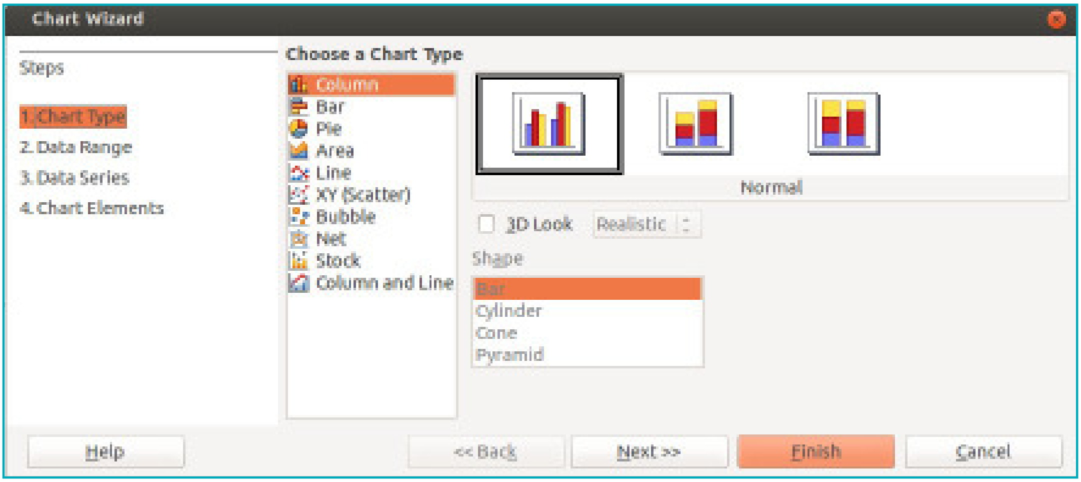



Fig 4.12 Chart Wizard - Chart Type

## Procedure for plotting charts

To plot a chart in LibreOffice Calc you have to follow the sequence on the left pane of the Chart Wizard window.

a) **Chart Types:** Here the user can select the desired chart type from 'Choose a Chart Type' list (Figure 4.12).

b) **Data Range:** This option is useful for selecting and changing the data ranges and axes labels (Figure 4.13).

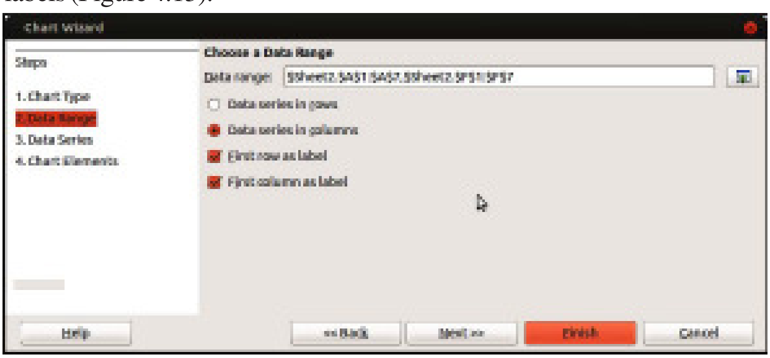



Fig 4.13 Chart Wizard - Data Range

c) **Data Series:** By using this option, we can add new data series to an existing chart or remove existing data series in edit mode, if required. For example, the sale of different products for the month of February is a new data series. (Figure 4.14).

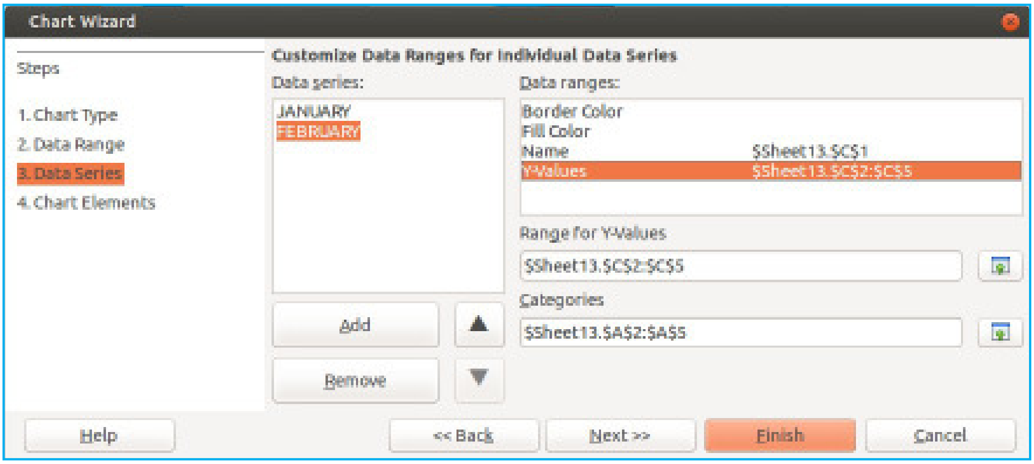



Fig 4.14 Chart Wizard - Data Series

d) **Chart Elements:** The title of chart, legend and grid settings are available on this page (Figure 4.15). After entering the above details, press 'Finish' button, and resulting output is shown in figure 4.16.

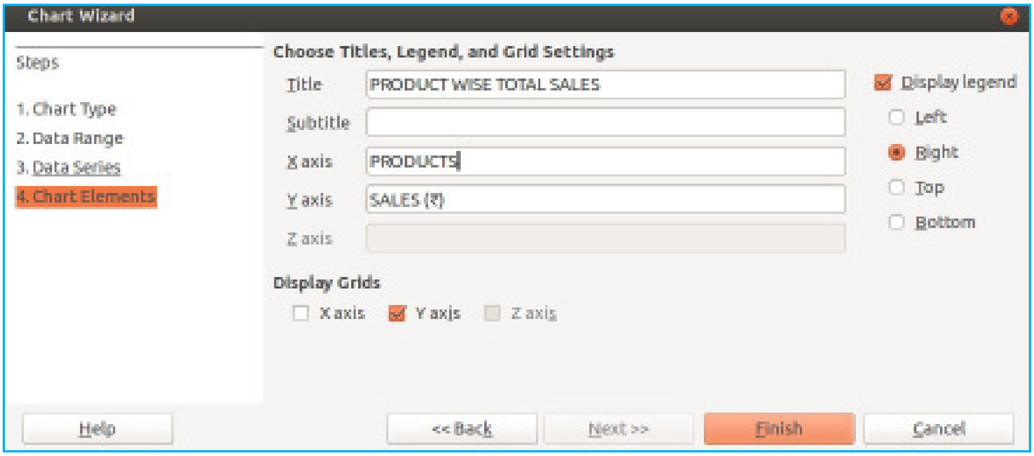



Fig 4.15 Chart Wizard - Chart Elements

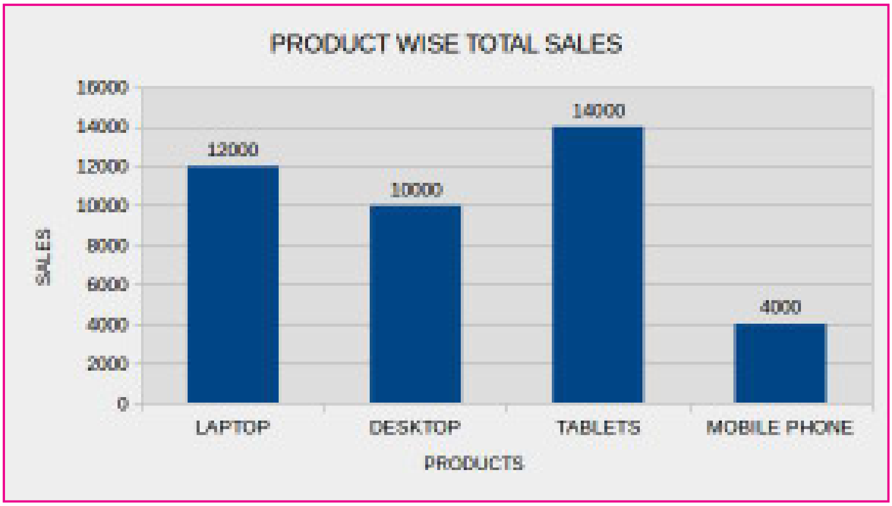



Fig 4.16 Chart Wizard - Output

## 4.3. Elements of A Chart/Graph

There are different elements in a chart/graph that give more clarity to the data. These parts that make up a chart are referred as chart elements. Figure 4.17 shows different elements of a chart.

1. **The chart area:** The entire area of a chart , including all elements is called the chart area. In other words, the chart area is bounded by the outer border.
2. **The plot area:** In a 2-D chart, the area is bounded by the X and Y axes . In a 3-D chart, the area is bounded by the three (X, Y and Z) axes. It is also called chart wall. This area can have its own border as well as a background colour.
3. **Chart floor:** The chart floor is the lower area on which the data points are placed. It can be seen only in 3D charts.
4. **Chart main title:** This is the explanatory heading at the top of the chart.
5. **Chart subtitle:** This title identifies the purpose of a chart.
6. **X axis:** Horizontal axis in a chart is called X axis. It is also called Category axis.
7. **Y axis:** This is the vertical axis of a chart. It is also called Value axis.
8. **Z axis:** In case of 3D chart Z axis will also be there, which represent the depth.
9. **Axis Titles:** This mention the name or title for X, Y and Z axes. See '9A' and '9B' marked in figure 4. 17.


Fig 4.17 Elements of a Chart

10. **Data points:** The individual values plotted in a chart and represented by bars, columns, lines, pies or various other shapes are called Data point or Data marker. It is a symbol on the chart that represents one value of data series.

11. **Data series:** Data markers of the same colour or pattern are called data series. The data series are related data points that are plotted in the chart/graph. It is a collection of data points or markers and normally corresponds to the data within a single row or column.

12. **Legend:** It is an identifier of a piece of information shown in the chart/graph. Generally, these legends are attached to a symbol or colour or pattern that is associated with data series of the chart. It is used to distinguish one data series from the another.

13. **Data Label:** The value of the data series plotted in a chart is known as data label. This provides additional information about a data marker to identify the details of data point in a data series - either values as a number or percentage.

14. **Grid lines:** These are the vertical and horizontal lines that appear in a chart. They are displayed in the chart wall. It increases the readability of a chart.

## 4.4. Formatting Charts

Why formatting is significant in charts and graphs?

Charts and graphs not only provide a visual delight but also it exemplifies the trends and patterns that the viewers can pick up. Here our intention is to enhance the appearance of a chart which is already created.

The format menu is used for making changes in the chart. Double-click the chart so that it is enclosed by a gray border indicating edit mode; then, select the chart element that we want to format. Choose Format from the menu bar, or right-click to display a context menu relevant to the selected element (Figure 4.18).

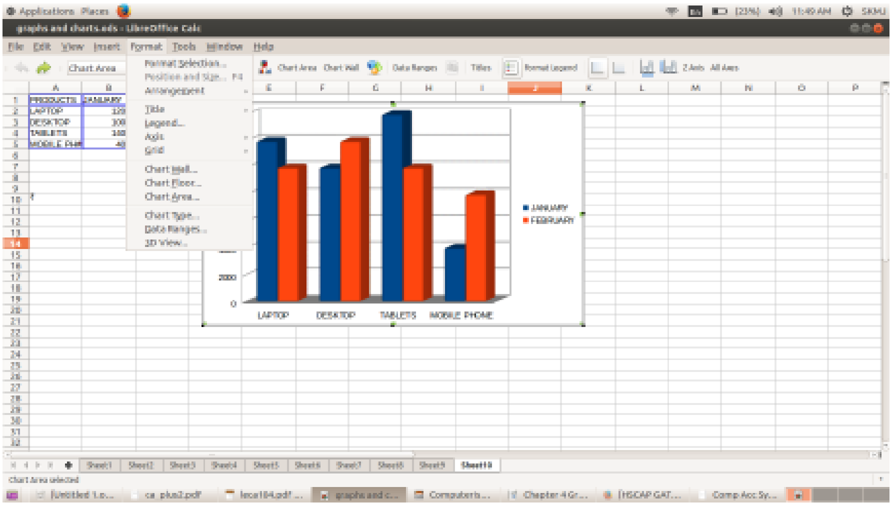


Fig 4.18 Formatting Chart

The following changes can be made in a chart with the help of Format menu:

1. **Format Selection:** It opens a dialog box in which we can specify the area fill, borders, transparency, characters, font effects, and other attributes of the selected element of the chart. This option will be enabled only when we select the chart wall.
2. **Position and Size:** It opens a dialog box by which we can rearrange the position and size of the graph. This option will be activated only when the chart wall is selected.
3. **Title:** This option is active only when there is a title on the chart and it helps to format the tittle of the chart and its axes.
4. **Legend**: This option allows us to format the location, borders, background, and type of the legend.
5. **Axis** : It allows us to format the lines that create the chart as well as the font of the text that appears on both the X and Y axis .
6. **Grid** : Here we can make changes in the lines that create a grid for the chart.
7. **Chart Type** : This facility enables us to change the type of chart to two dimensional or three dimensional.
8. **Data Ranges**: This option helps us to change the data range of a chart according to the need of the user.
9. **3D View** : This option is active only on 3D charts. Here necessary changes to the perspective, appearance and illumination of the chart can be done using the option.

## 4.5 Moving Chart Elements

If we want to move or resize individual chart element, follow the steps given below:

1) Double-click the chart.

2) Click on any of the elements - e.g., the title, the legend, etc.

3) Click and drag the element to be moved to the desired location.

**Changing the Chart Type**

The chart type can be changed using 'Format' menu as and when the situation demands. Suppose if we want to change a bar chart to a column chart, this can be done with the following steps.

1. Select the chart by double-click.
2. Then do any of the following alternatives

   Format - Chart Type from the menu bar.

   Click the Chart Type icon on the Formatting toolbar.

   Right-click on the chart and choose Chart Type.
3. Select the new chart type and click OK.

Let us see an example

Prepare a column chart showing the sales report from the following details of M/s Arya Agencies by using spreadsheet.

| Year | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| Sales in (₹ ) | 25000 | 37000 | 40000 | 35000 | 30000 |

In order to create a column chart, the steps mentioned under are to be followed:

1. Open spreadsheet.
2. Enter the details given in appropriate cells.
3. Select the cells containing the data.
4. Select the option Chart from Insert menu.
5. Choose the Chart Type from chart wizard and click 'Next'.
6. In Data Range option enable the radio button Data series in rows; check the boxes for **First row as label** and **First column as label**.
7. Go to Chart Elements option in Chart Wizard, give appropriate title for chart (Arya Agencies), sub title (Sales Report), X axis (Year) and Y axis (Sales in Rupees) Labels and click Finish button.
8. Save the spreadsheet by clicking on the 'Save' icon or press Ctrl+S keys and the resulting output is shown in figure 4.19.

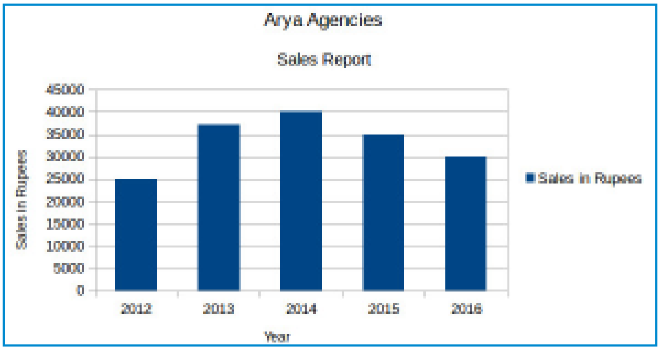



Fig 4.19 Column Chart

## 4.6. 2D-3D Charts/Graphs

- Have you experienced watching a 3D movie with 3D glasses on?
- How was it different from 2D film that you regularly watch in theatres?

The term 2D and 3D are used to indicate dimensions. 2D stands for Two-Dimensional, whereas 3D stands for Three-Dimensional. 2D represents an object in just two dimensions in X and Y axes as shown in figure 4.20 while 3D represents it in three dimensions in X, Y and Z axes as shown in figure 4.21

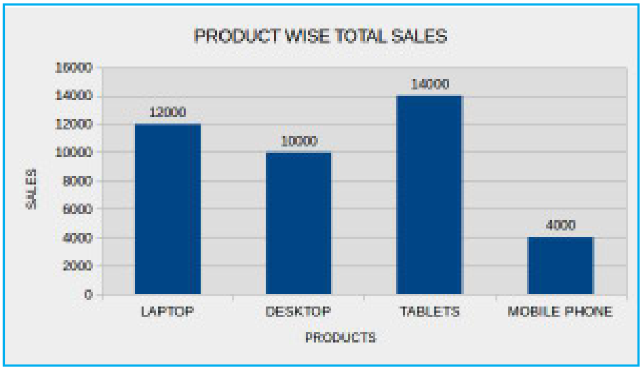



Fig 4.20 2D chart

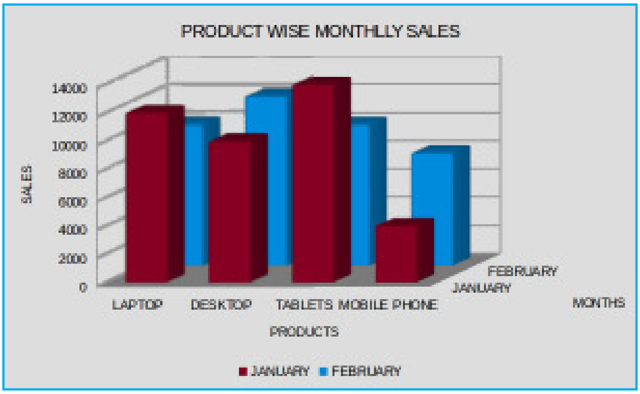



Fig 4.21 3D Chart

## 4.7. Advantages of charts and graphs

You have came across various components of graphs/ charts in the previous sections. The concepts you have learnt so far help you to list the advantages of graphs/ charts like:

- The message conveyed visually can be easily grasped by the audience
- A great deal of details that can be easily incorporated within short span of time

To conclude, charts and graphs help to draw quicker and easier conclusions and to identify the relationships of variables among one another rather than paging through raw data. The following are its advantages :

It helps to ;

- create visual appeal
- read the data easy
- analyse and interact the data quickly
- know the trends easily
- grasp the data quickly
- present huge volume of data easily and within limited space

## Summary

- Graph is a pictorial representation of data. Graphs are usually two dimensional. Sometimes three dimensional graphs are also used.
- Commonly used charts are Column chart, Bar chart, Pie chart, Line chart, Area chart, etc.
- Each and every element of chart such as plot area, axes, data, titles, labels, legends, grid lines, etc. can be formatted using format menu or format tool bar.
- The size of chart can be changed as per our requirements.
- Graphs and charts help to visualise the trends in presented data than textual information, so that they can be comprehended more easily.

## I can

- illustrate the data in graphical form in charts and diagrams using spread sheet
- state and apply the techniques of changing lay out, types and models of graphs and charts for representing business data using spread sheet
- describe the use of accounting / business data for graphical representation

## TE QUESTIONS

1. Line chart is used to display:
   a. information about the frequency of different quantities
   b. trends over a period of time
   c. percentage of data
   d. data in vertical bars
2. To fill the chart area, double-click the chart and select:
   a. Chart wall
   b. Data Range
   c. Chart area
   d. Titles
3. Find the odd one out:
   a. Normal pie chart
   b. Donut chart
   c. Exploded donut chart
   d. Bar chart

4. Explain the suitability of a column chart.
5. Show the steps for creating a chart.
6. Illustrate and explain the elements of a chart.
7. Compare 2D chart and 3D chart.
8. List out the advantages of charts and graphs in business applications.
9. Mr. Abhijith wants to move the title of a chart to a new location, can you help him in this regard.

## PE QUESTIONS

1. Total sales of Kiran Shoe Mart and Afsal Footwears for the year 2013 to 2017 are given below:

(Sales in ₹ )

| Year | Kiran Shoe Mart | Afsal Footwears |
|---|---|---|
| 2013 | 120000 | 140000 |
| 2014 | 140000 | 130000 |
| 2015 | 125000 | 135000 |
| 2016 | 110000 | 117000 |
| 2017 | 140000 | 150000 |

a) Present the data in a column chart.

b) Change the chart type to a line chart.

2. Prepare a pie chart from the following data of family expenditure for the month of January 2018:

( Amount in ₹ )

| Vegetables | Fish and Meat | Telephone | Electricity | Grocery | Others |
|---|---|---|---|---|---|
| 5000 | 12000 | 2000 | 1500 | 8000 | 6000 |

3. Draw a column chart for the following data and give a title "Age wise details".

| Age | 12 | 13 | 14 | 15 | 16 | 17 |
|---|---|---|---|---|---|---|
| **No. of students** | 50 | 60 | 70 | 90 | 150 | 160 |

## APPENDIX

### Lab work-1

Total sales of XY Agencies and Ready Bros for the year 2011 to 2015 are given below: ( Sales in ₹ )

| Year | XY Agencies | Ready Bros |
|---|---|---|
| 2011 | 40000 | 38000 |
| 2012 | 32000 | 48000 |
| 2013 | 51000 | 42000 |
| 2014 | 72000 | 81000 |
| 2015 | 60000 | 58000 |

a) Present the data in a column chart.

### Procedure

In order to create a column chart the steps mentioned under are to be followed:

1. Open spreadsheet.
2. Enter the details given in appropriate cells.
3. Select the cells containing the data.
4. Select the option Chart from Insert tab.
5. Choose the Chart Type from chart wizard and click 'Next'.
6. In Data Range option enable the radio button Data series in columns; check the boxes for First row as label and First column as label.
7. Go to Chart Elements option in Chart Wizard, give appropriate title for chart (Sales Report), X axis (Year) and Y axis (Sales in Rupees) Labels and click Finish button.
8. Save the spreadsheet by clicking on the 'Save' icon or press Ctrl+S keys.

**Output:**

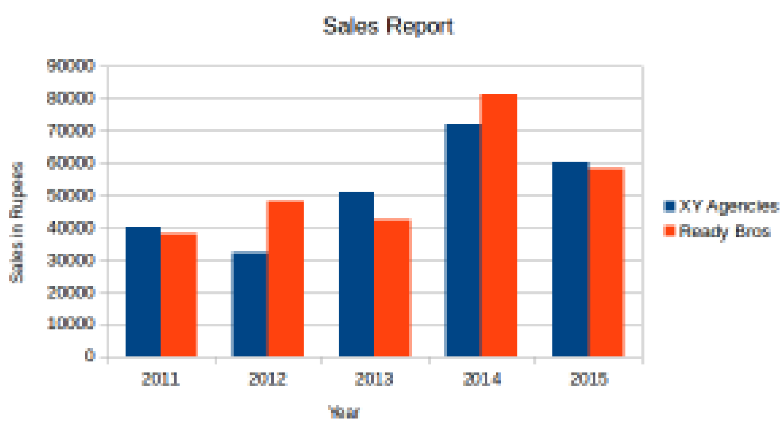



Fig 4.22 - Column Chart

### Lab work-2

2. Prepare a pie chart from the following data of PTA expenditure for the month of December 2017:

(Amount in ₹ )

| Repairs & Maintenance | Lab Items | Library | Electricity | Telephone | Others |
|---|---|---|---|---|---|
| 5000 | 12000 | 2000 | 1500 | 8000 | 6000 |

### Procedure

In order to create a column charts the steps mentioned under are to be followed:

1. Open spreadsheet.
2. Enter the details given in appropriate cells.
3. Select the cells containing the data.
4. Select the option Chart from Insert tab.
5. Choose the Chart Type from chart wizard and click 'Next'.
6. In Data Range option enable the radio button Data series in rows; check the boxes for First row as label and First column as label.
7. Go to Chart Elements option in Chart Wizard, give appropriate title for chart (PTA Expenditure), sub title (December 2017), X axis (Year) and Y axis (Sales in Rupees) Labels and click Finish button.
8. Save the spreadsheet by clicking on the 'Save' icon or press Ctrl+S keys.

### Output

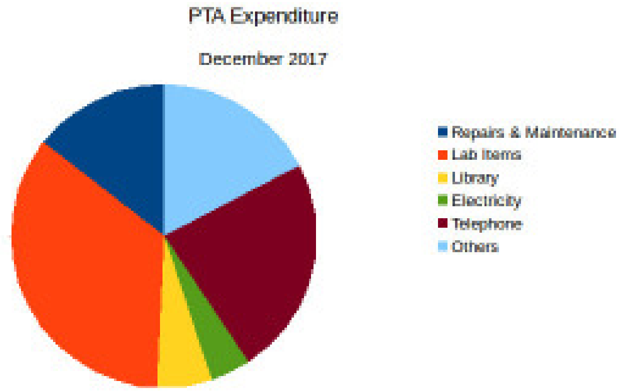



Fig 4.23 Pie Chart

Unit 5

# Accounting Software Package - GNUKhata

*Key Concepts*



## Introduction

We are already aware of the preparation of financial statements under manual accounting system. The use of computers in the field of accounting has made the job of accountants much easier. As of now, we have seen the enormous possibilities of spreadsheet application in various fields of accounting. Even though creation of journal, ledger and other task are tenable in a spreadsheet, most accountants prefer to use exclusive accounting software due to:

- instant processing of huge volume of transactions
- accomplishing the preparation of final accounts automatically and concurrently
- reducing the likelihood of errors
- enhancing security features which prevents frauds and misappropriation

All these have led to the enhanced role of computer assisted accounting software in the field of accounting and business. Nowadays irrespective of the scale of operation, all types of business organisations make the most of it from accounting software.

### Commonly used Accounting Software

There is innumerable accounting software packages available in the market like GNUKhata, SAP, Tata Ex, Peachtree, DacEasy, Tally, Fresh books, Quick books, Zoho books, Wave, etc. The selection of software depends, primarily on the need, use and size of business organisations.

Among the above, GNUKhata is a Free and Open Source Software (FOSS) and the rest are proprietary software. FOSS can be legally downloaded and customised without paying any fees. In this unit, the focus of our discussion is centred on GNUKhata which functions in Linux platform.

## 5.1 GNUKhata - Accounting Software

GNUKhata (pronounced as jee_new_khata) was developed by Digital Freedom Foundation, a public charitable trust, in association with International Centre for Free and Open Source Software (ICFOSS). It supports wide range of applications related with accounting and inventory management.

## 5.2 Features of GNUKhata

a) It is a free and open source accounting software

b) It is based on double entry book keeping

c) Comprehensive financial reports like Ledgers, Trial balance, Profit and loss Account, Balance sheet etc.are available

d) Source document can be attached along with the voucher entry

e) Export and import of data from Spreadsheet is possible

f) Password security and data audit facility provided

*Let's know more ...*

### Installation of GNUKhata

To install the software in linux platform, download Offline installer from the website www.gnukhata.in. Extract the downloaded file and refer README file for the installation process.

#### Steps for installing GNUKhata

Certain steps are to be followed to install GNUKhata just like installing any other software in a computer. They are as follows:

1. Double click on 'installer' file from the extracted 'offline installer' folder.
2. Click on 'Proceed' button.
3. Check (✓) the licence agreement and click on 'OK' button.
4. Enter the system password.
5. The system will respond with a message 'Installation Finished' and click on 'OK' button.

### How to run GNUKhata?

To run GNUKhata, the following path is to be used:

Applications → Office → GNUKhata.

Now the Home Screen of GNUKhata appears as shown in figure 5.1.

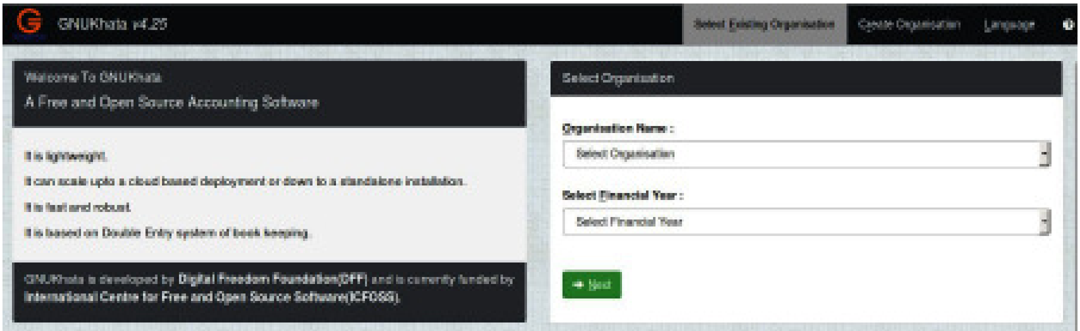



Fig 5.1 Home Screen of GNUKhata

## 5.3 Create Organisation

The first step in operating GNUKhata is to create an organisation. It may be either profit or non-profit organisation.

Create organisation → Enter the name and other details → Proceed

While creating an organisation the following details are required.

1. **Organisation Name:** Type the name of organisation to be created and press Enter key or Tab key to reach the next field.

2. **Case:** To change the appearance of the name of organisation, available options are illustrated with the help of an example of Royal Traders

    a. As-is : Royal traders ('As-is' stands for as it is entered)
    b. Upper Case : ROYAL TRADERS
    c. Lower Case : royal traders
    d. Title Case : Royal Traders

3. **Organisation Type:** Organisation may be either 'Profit Making' or 'Not for Profit'. Select the suitable organisation.

4. **Financial Year:** Enter the opening date of financial year or date of commencement of the organisation. Press enter key, then closing date will show up automatically which can be edited. Once organisation is created, the financial year cannot be changed.

5. **Select mode of accounting:** GNUKhata 4.25 version offers four options to maintain the books of accounts. They are:

Accounting only, Accounting with invoicing, Invoicing with bill wise accounting, Inventory with invoicing and bill wise accounting. Here the scope of our discussion is confined to 'Accounting only'.

The Create Organisation screen is shown in figure. 5.2.

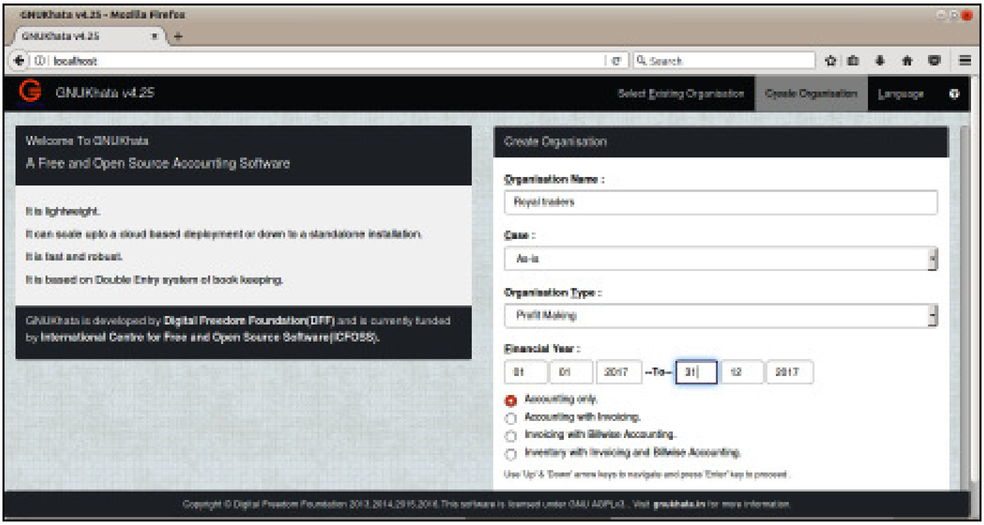



Fig 5.2 Create Organisation

## Creating Admin

Accounting software collects a lot of confidential data. If this information is tampered by unauthorised persons, it could create chaos in the business.

As part of providing security to the accounting information we have to set up the administrative features. It is mandatory to create 'Admin'. For this fill in the fields User name, Password, Confirm password, Security question and Answer to security question. Then click on 'Create & Login' to save the admin details. The Create Admin screen is shown in figure. 5.3.

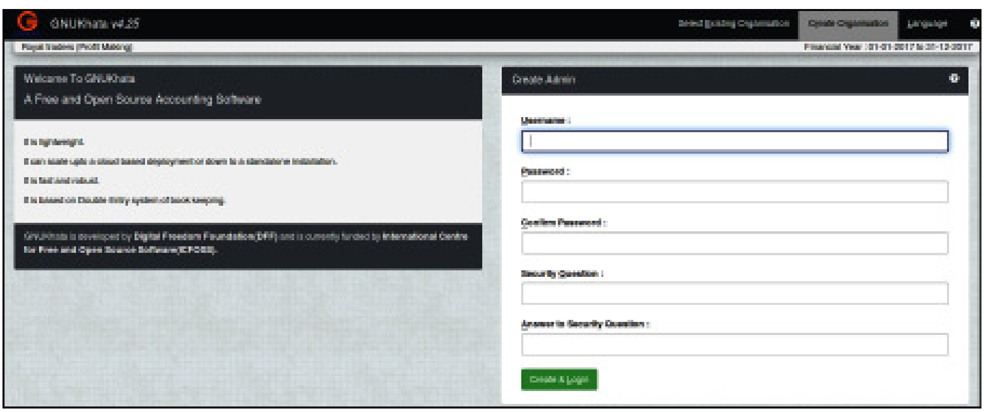



Fig 5.3 Create Admin

**Let's assess**

1. *From the following, identify the Free and Open Source Accounting software*

   *(a) Peachtree (b) Daceasy (c) GNUKhata (d) Tally*

2. *GNUKhata was developed by ..............................in association with ICFOSS*

3. *List out any two proprietary accounting software.*

4. *Which tab is used to create a new organisation in the home screen of GNUKhata?*

## 5.4 Groups and Sub-Groups

GNUKhata has 13 predetermined account groups, of which 9 relates to the Balance Sheet and the other 4 to the Profit & Loss Account or Income & Expenditure Account. It is available in 'Create Account' menu as detailed below:

Master → Create Account → Group → Select a group (Eg: Current Asset)→ Sub-group (Eg: Bank)

### Profit & Loss or Income & Expenditure Account Groups

We are already aware that, all direct incomes are credited and direct expenses are debited to the trading account. Likewise all indirect incomes are credited and indirect expenses are debited to profit and loss account. A list of Profit & Loss or Income & Expenditure account groups and sub groups are given in table 5.1

Table 5.1 Profit & Loss Account Groups

| Sl.No. | Group Name | Sub-group Name |
|---|---|---|
| 1 | Direct Income | None |
| 2 | Direct Expense | None |
| 3 | Indirect Income | None |
| 4 | Indirect Expense | None |

### Balance Sheet Groups

Similarly, all assets and liabilities are arranged in a systematic manner in order to prepare the Balance sheet. They belong to different groups and subgroups which are as given in table 5.2.

Table 5. 2 Balance Sheet Groups

| Sl.No. | Group Name | Sub-Group Name |
|---|---|---|
| 1 | Fixed Assets | Building, Furniture, Land, Plant & Machinery |
| 2 | Investments | Investment in Bank Fixed Deposits, Investment in Shares & Debentures |
| 3 | Loans (Asset) | None |
| 4 | Current Assets | Bank, Cash, Inventory, Loans & Advances, Sundry Debtors |
| 5 | Miscellaneous Expenses (Assets) | None |
| 6 | Capital/ Corpus | None |
| 7 | Loans (Liability) | Secured, Unsecured |
| 8 | Reserves | None |
| 9 | Current Liability | Provisions, Sundry Creditors for Expenses, Sundry Creditors for Purchases |

### Description of the Groups and Sub-Groups

We have seen the composition of group and sub-group items that will appear in Profit and Loss Account and Balance sheet. Now we shall discuss about these groups and sub-group items.

1. **Direct Income:** Income from operating activities comes under this group. For eg., Sale of goods. Income such as fees from clients or professional fees relating to service organisation will also be treated as direct income. These items will affect the Gross Profit of the organisation. GNUKhata opens a Profit & Loss Account or Income & Expenditure Account under this group.
2. **Direct Expense:** Expenses which are mainly related with purchase or manufacturing of goods. For eg., Purchases, wages, factory lighting, carriage inwards, consumables, etc. These expenses will affect the Gross Profit. By dafault opening stock comes under this group.
3. **Indirect Income:** It includes rent received, interest received, discount received, commission received, dividend received etc. These items will affect the Net Profit.
4. **Indirect Expense:** All office, administration, selling and distribution expenses such as salary, office telephone, electricity charges, maintenance of vehicles, interest on loan, rent, depreciation etc. are included in this group. You know that these items will affect the net profit of the organisation.

5. **Fixed Assets:** Accounts of all fixed assets are opened under this group. predefined Sub-Groups under this group are Building, Furniture, Land and Plant & Machinery.
6. **Investments:** It includes accounts of investments made by the organisation. The predefined Sub-Groups are Investments in Bank Deposits, and Investments in Shares & Debentures.
7. **Loans (Asset):** All long term loans issued by the organisation come under this group.
8. **Current Assets:** The amount invested in stock, debtors etc. are included in this category. The sub groups of Current Assets are:
   - Bank
   - Cash
   - Inventory
   - Loans and Advances (Prepaid expenses, short term loan issued by the organisation etc.)
   - Sundry Debtors
9. **Miscellaneous Expenses (Assets):** Preliminary expenditure which are not written off, huge advertisement expenditure etc. come under this group.
10. **Capital / Corpus:** Capital in case of business organisations and Corpus in case of not for profit organisations are included here.
11. **Loans (Liability):** This includes accounts of loans taken by the organization from banks and other financial institutions. The two sub-groups under this group are as follows:
    - Secured (Loan) : accounts of loans taken against the security.
    - Unsecured (Loan) : accounts of loans taken from partners, Directors, Office Bearers or others having no security.
12. **Reserves:** It involves retained earnings, reserves and surplus.
13. **Current Liabilities:**

    The sub groups of Current Liabilities are :
    - Provisions: Accounts of PF, ESI and TDS dues, etc.
    - Sundry Creditors for Expenses: Accounts of outstanding expenses, such as Salary Payable, Audit Fees Payable etc.
    - Sundry Creditors for Purchases

Suppose a firm has to create an account – Vehicles. Under which sub group would you place this? In GNUKhata, only four sub groups are available under Fixed Assets group of which vehicle cannot be included.

To resolve the issue, a new sub-group 'Vehicle' is to be created under the group Fixed Assets.

You can create any new sub-group in the same way as explained earlier.

## 5.5 System Generated Ledger Accounts

When an organisation is created the software automatically creates the following ledgers (Table 5.3). These accounts can neither be modified nor deleted.

Table 5.3 System Generated Ledger Account

| Sl. No. | Account Name | Group Name | Sub-Group Name |
|---|---|---|---|
| 1 | Closing Stock | Current Assets | Inventory |
| 2 | Opening Stock | Direct Expenses | None |
| 3 | Profit & Loss Account (For Profit Making Organizations:) Or Income & Expenditure Account (For Not for Profit Organizations ) | Direct Income | None |
| 4 | Stock at the Beginning | Current Assets | Inventory |

**Let's assess**

1. *What are the accounting groups related to Profit & Loss Account?*
2. *The subgroup of Sundry Creditors for Expenses come under the group ...............*
3. *GNUKhata opens Opening Stock Account under ............... group.*
4. *Opening stock by default is created under ............... group.*
5. *Identify the System Generated Ledger account from the following.*
   *(a) Closing Stock (b) Cash Account (c) Bank Account*
   *(d) Prepaid Expenses*

### Treatment of specific items

Let us discuss the treatment of following items in GNUKhata.

**Closing stock**

You are familiar with the term 'stock' or 'inventory'. Goods lying unsold with the business at the end of the accounting year are termed as closing stock. It is treated as current asset and included in the asset side of Balance Sheet. At the same time it will appear in the credit side of Profit and Loss Account.

For entering Closing Stock:

*Step 1 : Open Journal voucher → Enter Voucher Number and Closing date → Debit Closing Stock and credit Profit & Loss account.*

To carry over the closing stock as the opening stock of next year, use the option Administration → Close Books/Roll Over. The closing stock is converted to opening stock through a temporary account 'Stock at the beginning'.

**Opening Stock**

The stock of goods lying with the business in the previous year (as closing stock) will be made available for sale in the next year and is regarded as opening stock. It is treated as direct expense and appears in the debit side of Profit and Loss Account.

If the accounts of business are computerised for the first time, the amount of opening stock can be inserted through the following steps:

*Step 1 : Edit the Stock at the Beginning Account*

*Master→Edit Account → Select Stock at the Beginning Account → Click on Edit → Enter Opening Balance*

*Step 2 : Voucher → Select Journal voucher → Enter Voucher No. & Opening date → Debit Opening Stock* and credit Stock at the Beginning.

## Sales Returns & Purchase Returns

In this software **Sales Returns** comes under the sub-group 'Direct Expense' while **Purchase Returns** are treated as 'Direct Income'. This is done for making necessary adjustments and to arrive at the true operating results.

The profit and loss account groups and their sub groups are given in table 5.4 and the Balance sheet groups and their sub group are given in table 5.5.

Table 5.4 Groups, Sub-Groups and Ledger Accounts in Profit and Loss Account/ Income & Expenditure Account

| Group Name | Sub-group Name | Ledger Account |
|---|---|---|
| (1) Direct Income | None | • Sales<br>• Professional Fees<br>• Purchase Return<br>• Profit and Loss Account or Income & Expenditure Account (*System Generated Ledger Account*) |
| (2) Direct Expense | None | • Wages<br>• Carriage Inward<br>• Coal, Gas & Water of Factory<br>• Factory Expenses( Lighting, Power,etc)<br>• Freight<br>• Import Duty |

| | | |
|---|---|---|
| | | • Octroi<br>• Opening Stock Account (*System Generated Ledger Account*)<br>• Purchases<br>• Sales Return |
| (3) Indirect Income | None | • Bad debt received<br>• Commission Received<br>• Discount Received<br>• Income from Investment<br>• Rent Received<br>• Interest Received |
| (4) Indirect Expense | None | • Office Expenses<br>• Salary<br>• Rent<br>• Insurance<br>• Audit Fee<br>• Electricity<br>• Depreciation<br>• Bad debt<br>• Telephone Charge<br>• Commission Allowed<br>• Discount Allowed<br>• Export Duty<br>• Interest on Loan<br>• Legal Expence<br>• Postage and Telegram<br>• Printing and stationery |

Table 5.5 Groups, Sub-Groups and Ledger Accounts in Balance Sheet

| Group Name | Sub-group Name | Ledger Account |
|---|---|---|
| 1. Fixed Assets | 1. Building | Building Account<br>Office Building Account<br>Factory Building Account |
| | 2. Furniture | Furniture Account<br>Office Furniture Account |
| | 3. Land | Land Account<br>Land & Building Account<br>Premises Account |

| | | |
|---|---|---|
| | 4. Plant & Machinery | Machinery Account<br>Plant Account<br>Plant & Machinery Account |
| 2. Investments | 5. Investment in Bank Deposits | Fixed Deposits in Bank |
| | 6. Investment in Shares & Debentures | Investment in Shares<br>Investment in Debentures |
| 3. Loans (Asset) | None | Accounts of all long term loans given by the organisation |
| 4. Current Asset | 7. Bank | Bank Account |
| | 8. Cash | Cash in Hand<br>Cash Account<br>Petty Cash Account |
| | 9. Inventory | Closing Stock (System Generated Ledger Account) |
| | 10. Loans and Advances | Short term loans and advances given to the employees<br>Prepaid Expenses |
| | 11. Sundry Debtors | All Debtors / Customers Account |
| 5. Miscellaneous Expenses (Asset) | None | Preliminary Expenses |
| 6. Capital / Corpus | None | Capital Account<br>Partner's Capital Account<br>Share Capital Accounts<br>Capital Fund |
| 7. Loans (Liability) | 12. Secured | Bank Loan<br>Other secured loans |
| | 13. Unsecured | Loan from Partners<br>Loan from Manager(s) etc. |
| 8. Reserves | None | Retained Earnings<br>General Reserves<br>Reserves and Surplus |
| 9. Current Liability | 14. Provisions | Accounts of PF, ESI, TDS dues, etc.<br>Provision for Bad Debts<br>Provision for Income Tax |
| | 15. Sundry Creditors for Expenses | Outstanding Expenses |
| | 16. Sundry Creditors for Purchases | All Suppliers / Creditors Account |

***Let's assess***

1. *Purchase return and Sales return account , comes under .......... and .............. groups respectively.*
2. *In GNUKhata system generated ledger accounts are neither to be..............nor to be ..................*
3. *The temporary account used to convert (roll over ) closing stock of the previous year to current year is .................*
4. *Identify the group under which the following ledgers are to be created.*

   *(i) Depreciation* *(ii) Sales Return*

   *(iii) Preliminary Expenses* *(iv) Drawings*

## 5.6 Options on Menu Bar in GNUKhata

For interacting with the application, menu options are made available to the users. GNUKhata too gives out a control element in the form of main menu, and on clicking main menu a sub menu drops down. For mastering the skill in using the accounting software, learners need to be enlightened on each and every option available in the menu bar. Let us discuss this one by one.

### 1. Master

The figure adjoining highlights the drop down menu available in the Master menu:

Create Account – This option is taken to create ledger accounts.

Edit Account – Already created ledger accounts can be edited here.

(See Figure 5.4)

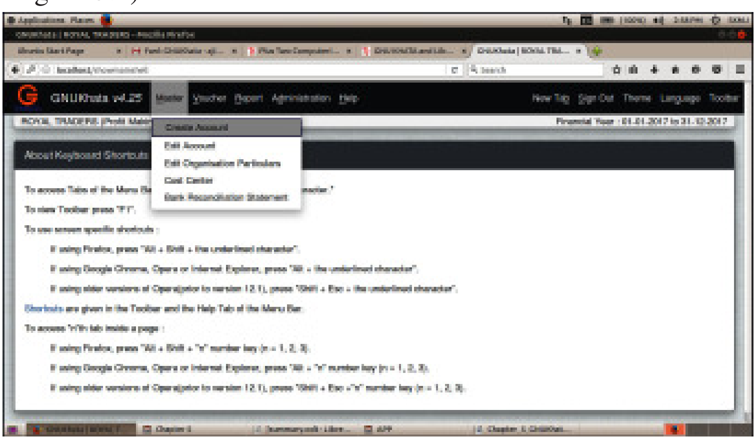



Fig 5.4 Master Menu

Edit Organisation Particulars – The organisational details can be edited with this option Cost Center – Organisational unit to which cost or expenses can be allocated in a transaction.

Bank Reconciliation Statement – This option is used to prepare BRS.

### 2. Vouchers

This menu is essential for recording transactions. Different vouchers like Receipt, Payment, Sales, Purchase, Contra, Journal, Sales Return, Purchase Return, Credit Note and Debit Note are available under this main menu. Besides this, option for Find/Edit Voucher is also available.

### 3. Report

How do you know that everything in your business is alright?

Only way, you can truly know this is to sail through your reports to find your key performance indicators. Not only generating a true and fair report but also interpreting it, helps you to run the business in a better manner.

Generating reports are very well carried out by this menu. This includes Ledger, Trial Balance, Cost Center Statement, Cash Flow, Balance Sheet, Consolidated Final Accounts, Profit & Loss  Account, List of Accounts, List of Deleted Vouchers, List of Users and Activity Log.

### 4. Administration

For protecting your data, GNUKhata provides certain security measures. Privileges are given to the administrator by which he can control the operations of this accounting package. Authenticating users and granting privileges are given to new users with password, so that who can do what, when and under which conditions can be well defined. Moreover this option allows for export and import of data also.

The drop down menu includes - New User, Remove User, Change Password, Close Books/Roll Over, Organisation Preferences, Export Data, Delete Organisation and Import Data.

### 5. Help

Most applications will have 'Help' options. What is the utility of this option?

This option explains the features of the software and helps the user to understand its operation. Help menu is meant for supporting the users on this accounting software. This menu is empowered with GNUKhata Manual, Short cut keys etc.

## 5.7 Ledger Creation

You know the process of manual accounting where we record all transactions relating to various accounts using journal. Later, all these accounts are classified in the secondary books called ledger.

In GNUKhata an account itself is called ledger. For eg. Sales ledger, capital ledger, purchases ledger etc. These accounts need to be created first and we should be able to define the group under which this ledger should be placed. An accounting software itself cannot identify that wages is direct expense and should come up in the debit side of 'Trading account'. If you group 'wages' under 'indirect expense', then GNUKhata promptly recognises it and shows this item in the profit and loss account. From this you might have understood how important is the grouping process.

So, the balance of Ledger account will appear either in Balance sheet or in Profit & Loss Account depending upon the group under which it is created.

To create a Ledger account, select 'Create Account' option from 'Master menu'.

As we have discussed earlier, only accounts of assets and liabilities have opening balances. Incomes and expenses are closed by transfering to Trading and Profit and Loss Account. Keeping this in mind, while creating a ledger account only accounts relating to Balance Sheet group will have opening balances. The software never asks for opening balances of income and expense account.

One more aspect needs clarity at this point of time. Suppose, if a firm commenced its business on 1st January 2018 and accounts were maintained manually till 1st March 2018. Here after, the firm decides to computerise the accounting system using GNUKhata. How will you enter the income and expenses from 1st January 2018 to 28th February 2018.

The software takes an assumption that if a firm switch over from manual to computerised accounting, then they will process the accounts till 28th February 2018 and prepare a Balance Sheet manually. Then the balances of assets and liabilities are brought into the software package as opening balance. The alternate option is to take the ledger balances till 28th February 2018 and pass an entry using appropriate voucher. For example, if Wages Account shows a ledger balance of ₹ 3,000 till 28th February 2018, pass a journal entry by debiting Wages a/c and crediting Cash a/c using 'Payment Voucher'.

Now let us see how a ledger is created in GNUKhata.

**Master → Create Accounts**

The screen appears as given in figure 5.5

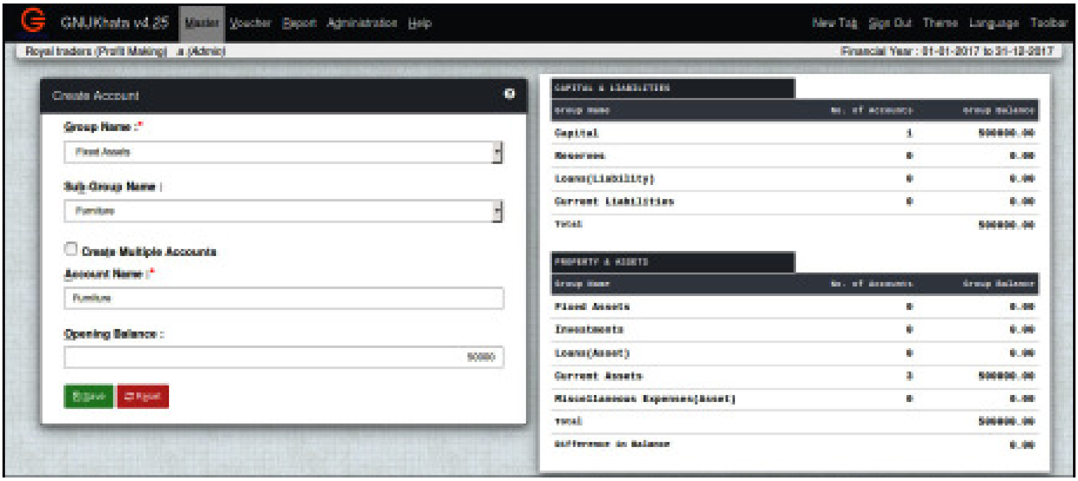



Fig 5.5 Create Account

The ledger account creation screen has two sides. The left side of the screen shows the following.

a. **Group Name** – Select the group to which the account belongs.

b. **Sub group Name** – Select the sub group from the drop down option.

c. **Account Name** – Enter the name of the account for example, Capital, Purchases, wages, etc.

d. **Opening Balance** – Enter the opening balance of assets and liabilities if any.

Click the 'Save' button to save your ledger 'Reset' option gives the freedom to start the ledger creation process once again.

Multiple ledger accounts can be created by checking into 'Create Multiple Accounts' check box. In the ensuing dialogue box, enter the names of all accounts to be created under that particular group.

On the right side of the screen, you can see a vertical format of a Balance Sheet. This part will appear only when ledger accounts relating to assets and liabilities are created. The number of accounts opened in each group and the total opening balances of accounts are also displayed here. The difference in balances if any, will also shown on the bottom of this side.

The right side of the screen will go blank if ledger accounts relating to income and liabilities are selected since it has no balance.

### Display Ledger Accounts

To view the ledger already created, use the following path.

**Report → Ledger → Account Name → Select the name of ledger → Check or uncheck the option Monthly Ledger → View**

The option 'Monthly Ledger' if checked (✓) the system will show monthwise ledger and if it is unchecked it will display the balance of respective ledger accounts for the whole period.

### Editing Ledger Accounts

To edit a ledger account, select Edit Account from Master menu. Here we can change Account Name and Opening Balance, if any, but cannot change the name of Group and Sub-Group.

### Deleting Ledger Accounts

You can definitely delete a ledger by selecting 'Edit Account' from Master menu. Select the ledger Account to be deleted, click on Delete Button and confirm the deletion. System generated account and the ledger account already used in voucher cannot be deleted.

**Master → Edit Account → Select Ledger →Delete**

## 5.8 Creation of new sub-group

As we have seen earlier, you can create new sub-groups under a pre-defined group. It is to be remembered that we cannot create a new account group. For example, a new sub-group named 'Purchases' can be created under the main group 'Direct Expenses' and various accounts can be opened under this sub-group such as 'Purchase of Raw Materials', 'Purchase of Finished Goods', etc. Once a sub-group is created it cannot be deleted.

***Let's assess***

1. *In GNUKhata, 'Edit Account' option is available in ...................menu.*
2. *Which menu is used to generate reports in GNUKhata?*
3. *Identify the menu used for deleting ledger from the following.*
   *(a) Create Account (b) Edit Account (c) List of Acccounts*
4. *Write the path to create ledger account in GNUKhata ?*

## 5.9 Voucher Entry

Now you know how to create, display, edit and delete a ledger. It's time for us to think in terms of recording a transaction in this software. Through 'Voucher entry' we can record transactions. So, recording a transaction through voucher interface is called voucher entry. The voucher entries are made on the basis of concerned source documents. While recording a transaction through the voucher, we have to enter the voucher number, date, amount to be debited / credited along with its narration. We can add any number of debits and credits in a voucher entry. Before proceeding further let us discuss the different types of vouchers that are available for recording various transactions.

### Types of Vouchers

GNUKhata offers the following pre-defined voucher types given in table 5.6. You cannot have a new voucher type other than those offered by the package.

Table 5.6 Voucher Types

| Voucher Type | Used To Record | Short cutKeys |
|---|---|---|
| Receipts | To record all receipts of cash or cheque | F4 |
| Payments | All payments made by cash or cheque | F5 |
| Sales | Cash and credit sales of goods | F6 |
| Purchase | Cash and credit purchase of goods or raw materials | F7 |
| Contra | Deposits or withdrawals of cash from bank or transfer of funds from one bank to another and transfer of cash to petty cash | F8 |
| Journal | Rectification entries or transfer or adjustment entries purchase or sale of fixed assets on credit | F9 |
| Sales Return | Return of goods by a customer | Ctrl+1 |
| Purchase Return | Return of goods to supplier | Ctrl+2 |
| Credit Note | Reduction in the amount due from a customer or for allowances | Ctrl+3 |
| Debit Note | Reduction in the amount payable to a supplier or for allowances | Ctrl+4 |

Now let us examine how the following transactions of Star Traders are entered through appropriate vouchers.

01-2-17 Started business with cash ₹ 2,00,000

04-2-17 Opened a bank account ₹ 40,000

09-2-17 Purchased goods for cash ₹ 10,000

11-2-17 Cash sales ₹ 20,000

17-2-17 Paid wages ₹ 1,000

20-2-17 Received commission ₹ 500

26-2-17 Purchased machinery from Beena ₹ 12,000

27-2-17 Purchased furniture ₹ 6,000

28-2-17 Paid salary ₹ 2,000

To record the transactions through the vouchers, steps mentioned below are to be followed:

1. Open GNUKhata -
   Applications →Office → GNUKhata
2. Create Organisation -
   Click on 'Create Organisation'→ Enter the necessary details → Proceed
3. Create Admin → Enter the details→ Create & Login
4. Create appropriate ledger account with the help of table given below:

Master → Create account → Select Group→Sub group→ Enter the Account name→Save

| Sl No | Group | Sub -group | Name of Account | Opening Balance |
|---|---|---|---|---|
| 1 | Current Assets | Cash | Cash | —— |
| 2 | Capital | None | Capital | —— |
| 3 | Current Assets | Bank | Bank | —— |
| 4 | Direct Expenses | None | Purchases | —— |
| 5 | Direct Income | None | Sales | —— |
| 6 | Direct Expenses | None | Wages | —— |
| 7 | Indirect Income | None | Commission | —— |
| 8 | Fixed Asset | Plant & Machinery | Machinery | |
| 9 | Current Liability | Sundry Creditors for fixed assets (create new sub group) | Beena | |
| 10 | Fixed Asset | Furniture | Furniture | |
| 11 | Indirect Expenses | None | Salary | |

Step 5: After creating the necessary ledger accounts, proceed with voucher entry.

The path mentioned below is to be followed.

Voucher → Select appropriate voucher.

Then enter the details as follows.

- Enter voucher number and date
- Select the debit account name and enter the amount. Press enter key
- Similarly give credit account and amount
- Enter narration and press save button

Now the voucher creation screen appears as shown in figure 5.6.

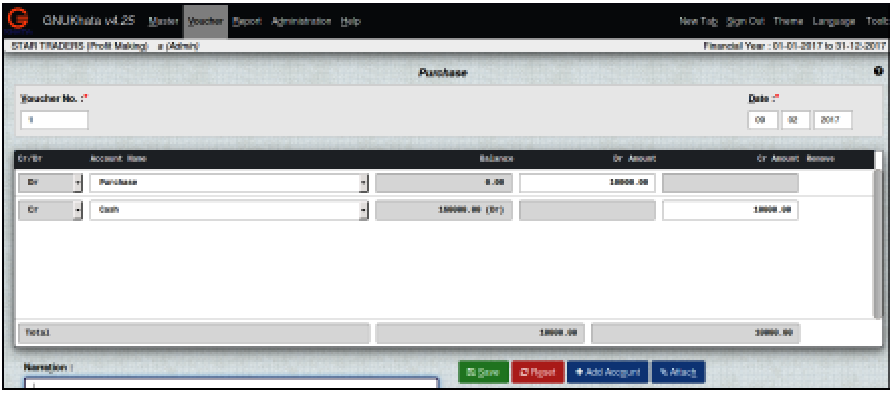



Fig 5.6 Voucher creation

The 'Add Account' menu available in the voucher creation screen allows for creation of new ledger account , as can be seen in figure 5.6. Similarly 'Attach' tab provides an opportunity to attach a source document of various transactions at the time of voucher entry. Reset tab will reset the entire data already entered in that particular voucher.

Enter the details of vouchers based on the details shown in table 5.7.

Table 5.7 Details of vouchers.

| Date | Account name | Voucher | Function Key | Dr/Cr | Amount (₹) |
|---|---|---|---|---|---|
| 1-2- 17 | Cash<br>Capital | Receipt | F4 | Dr<br>Cr | 2,00,000<br>2,00,000 |
| 4-2-17 | Bank<br>Cash | Contra | F8 | Dr<br>Cr | 40,000<br>40,000 |
| 9-2-15 | Purchases<br>Cash | Purchase | F7 | Dr<br>Cr | 30,000<br>30,000 |
| 11-2-17 | Cash<br>Sales | Sale | F6 | Dr<br>Cr | 2,500<br>2,500 |
| 17-2-17 | Wages<br>Cash | Payment | F5 | Dr<br>Cr | 1,000<br>1,000 |
| 20-2-17 | Cash<br>Commission | Receipt | F4 | Dr<br>Cr | 500<br>500 |
| 26-2-17 | Machinery<br>Beena | Journal | F9 | Dr<br>Cr | 12,000<br>12,000 |
| 27-2-17 | Furniture<br>Cash | Payment | F5 | Dr<br>Cr | 6,000<br>6,000 |
| 28-2-17 | Salary<br>Cash | Payment | F5 | Dr<br>Cr | 2,000<br>2,000 |

Step 6 : Display the list of transactions.

Vouchers → Find/ Edit → Voucher→ Select criteria as time interval → Search→ View printable version.

### Finding and Editing a Voucher

In order to make necessary changes in a voucher entry that we have already entered, Find/Edit option is available in GNUKhata. For this select 'Find/Edit Voucher' from Voucher menu. Select Criteria to search the required voucher. All transactions fulfilling that criterion will be displayed. Select the transaction that we want to edit and press Enter Key. The voucher will appear and click on Edit button. Make necessary changes in the record and save.

### *Cloning a Voucher*

*Clone a voucher means to copy a voucher. Where a number of similar entries are to be made Cloning module is used. To apply this facility find the voucher through 'Find/Edit Voucher' option from Voucher menu. Open the voucher to be copied and click on Clone button. Thereby a new voucher with similar details will be generated automatically and save it.*

### Deleting a Voucher

Voucher deletion is used when there is a duplicate entry is made. In order to delete a voucher find the voucher from Find /Edit option and press the 'delete button'. After that there will be a confirmation window, and press 'yes' if you want to delete the voucher. Deleted vouchers cannot be restored, we can view a List of Deleted Vouchers through Report menu.(See Figure 5.7)

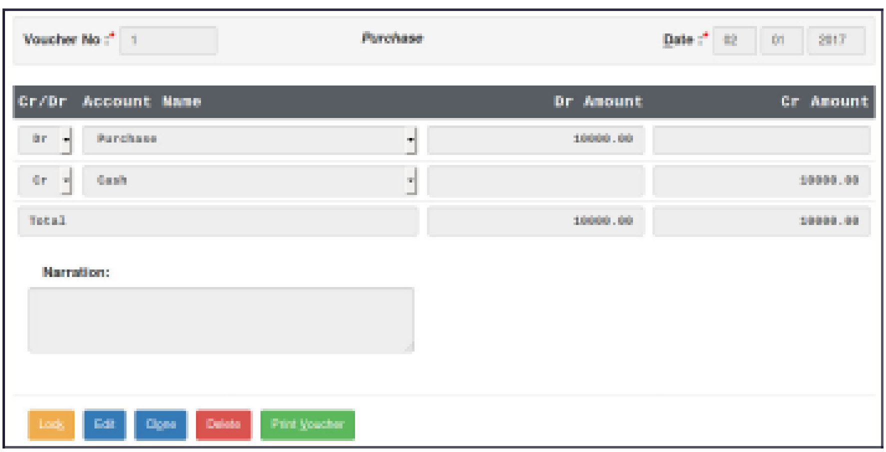



Fig 5.7 Voucher Deletion

### Attach Document

This unique feature enables the user to attach scanned copies of the supporting documents to the record of a transaction. The attachments can be viewed, deleted and replaced. This unique feature is most useful while auditing, which enables a scanned copy of a supporting document to be viewed instantly.

## 5.10 Reports

Report menu is used to view reports such as Ledger, Trial Balance, Balance Sheet, Profit & Loss Account, List of Accounts, List of Deleted Vouchers, etc. according to the needs and requirements of the users (See the figure 5.8)

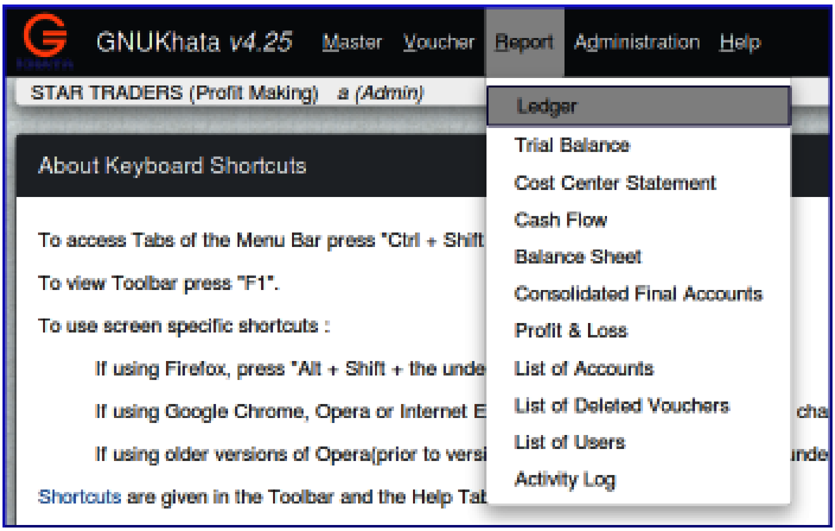



Fig 5.8 Reports

To generate reports in GNUKhata, select suitable option from the Report Menu as detailed below:

1. Ledger Account: Report →Ledger → Select Account →Set the Date → View
2. Trial Balance: Report →Trial Balance →Set the Date →View (See figure 5.9)
3. Profit & Loss Account: Report→Profit & Loss→Set the Date →View (See figure 5.10)
4. Balance Sheet: Report →Balance Sheet →Set the Date →View (See figure 5.11)

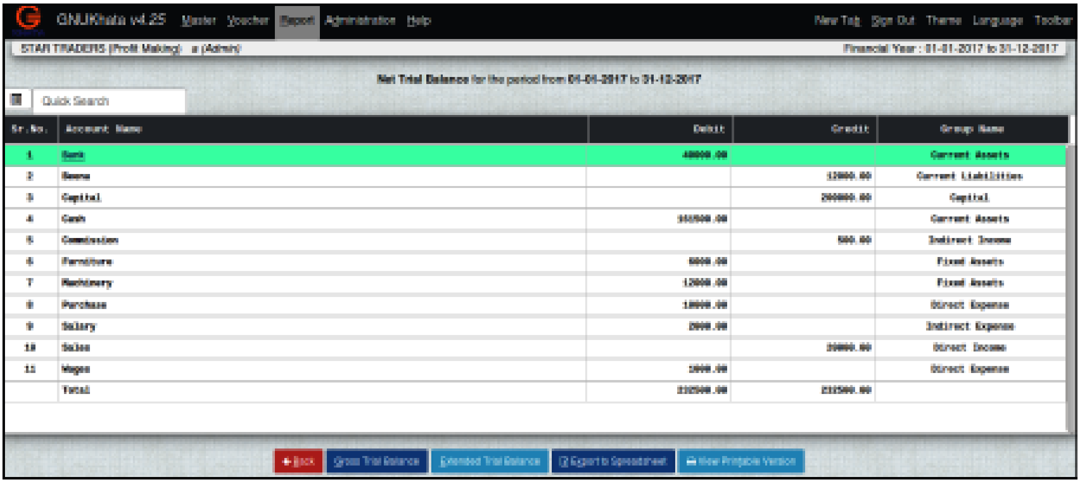



Fig 5.9 Trial Balance

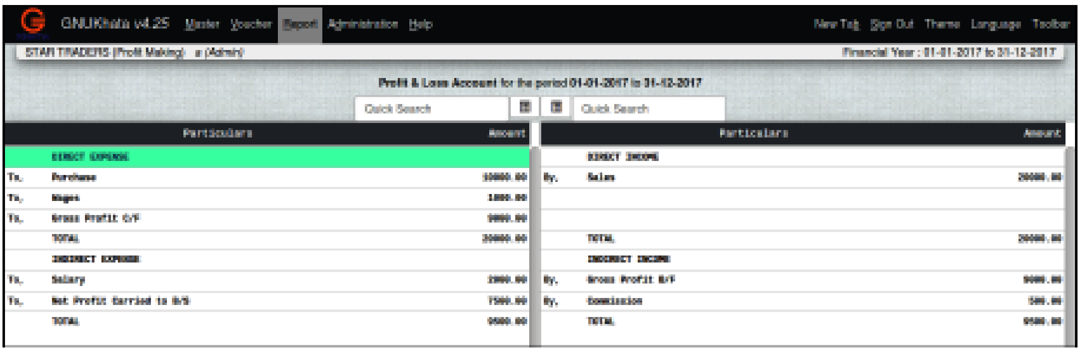



Fig 5.10 Profit & Loss Account

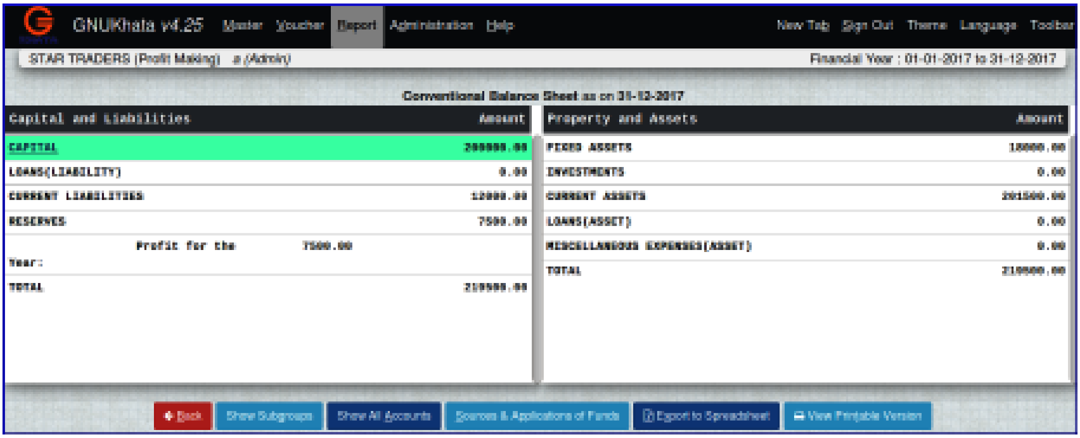



Fig 5.11 Balance Sheet

## 5.11 Bank Reconciliation Statement (BRS)

You may recall how we have prepared Bank Reconciliation Statement manually in order to list out the reasons for disagreement between the balances as per pass book and cash book on a particular date. The statement has to be prepared at the time of finalisation of accounts or periodically.

The Bank Reconciliation Statement is used to compare transactions on two dates. The first one is the date of transaction and the second one is the date of the same transaction which appears in the bank passbook or bank statement, otherwise known as the 'Clearance Date'. Now we will see how a BRS can be prepared through GNUKhata.

Select Bank Reconciliation Statement from the Master menu and follow the steps given below:

Master → Bank Reconciliation Statement → Select Account Name → Set the Reconciliation Period (From Date and To date) → Click on view →Enter Clearance Date.

***Let's assess***

1. *The short cut key of Contra Voucher is ....................*
2. *Which voucher is used to make rectification entries ?*
3. *Bank Reconciliation statement is available in ....................Menu*
4. *Write the path to display Trial Balance.*

**Illustration:**

Prepare a Bank reconciliation statement of Arshad Traders, North Paravur, Ernakulam as on 30-11-2017.

Opening balance of PNB Saving Bank Account (1-11-2017) ₹ 40000.

1-11-2017 Purchased goods and paid by cheque (Ch No. 231) ₹ 10000

1-11-2017 Deposited into PNB Saving Bank Account ₹ 16000

2-11-2017 Paid rent by cheque( Ch No. 232) ₹ 10000

2-11-2017 Paid salaries by cheque (Ch No. 233) ₹ 6000

30-11-2017 Interest credited in the passbook ₹ 600

30-11-2017 Bank charges debited in passbook ₹ 150

Cheque No. 231 was presented with the bank on 30-11-2017. Cheque No. 232 was presented with the bank on 1-12-2017. But Cheque No. 233 is not presented to the bank till the date. All other transactions were entered in the pass on the same day itself.

**Procedure**

Steps:

1 : Open GNUKhata -
Applications→ Office → GNUKhata

2 : Create Organisation -
Click on 'Create Organisation'→ Enter the necessary details

3 : Create Admin → Enter the details

4 : Create appropriate ledger accounts -
Click on Master → Create account→ Select Group→Sub group→Enter the Account name→ Save

| Sl No | Group | Sub group | Name of ledger | Opening Balance |
|---|---|---|---|---|
| 1 | Current Asset | Bank | PNB | 40000 |
| 2 | Current Asset | Cash | Cash | - |
| 3 | Direct expense | None | Purchases | - |
| 4 | Indirect expense | None | Rent | - |
| 5 | Indirect expense | None | Salary | - |
| 6 | Indirect Income | None | Interest received | - |
| 7 | Indirect expense | None | Bank charges | - |

5. Enter Vouchers (based on the table 5.8).
Voucher → Select appropriate voucher → Enter details

Table 5.8 Details of vouchers

| Date | Account name | Voucher | Function Key | Dr/Cr | Amount (₹) |
|---|---|---|---|---|---|
| 01/11/17 | Purchase<br>PNB | Purchase | F7 | Dr<br>Cr | 10000<br>10000 |
| 01/11/17 | PNB<br>Cash | Contra | F8 | Dr<br>Cr | 16000<br>16000 |
| 02/11/17 | Rent<br>PNB | Payment | F5 | Dr<br>Cr | 10000<br>10000 |
| 02/11/17 | Salary<br>PNB | Payment | F5 | Dr<br>Cr | 6000<br>6000 |
| 30/11/17 | PNB<br>Interest | Receipt | F4 | Dr<br>Cr | 600<br>600 |
| 30/11/17 | Bank charges<br>PNB | Payment | F5 | Dr<br>Cr | 150<br>150 |

6. Enter Clearance Date :-
Master→Bank Reconciliation Statement→Select Account Name (PNB)

→Set the Reconciliation Period (From Date and To date ) → Click on view →Enter Clearance Date. See the figure 5.12

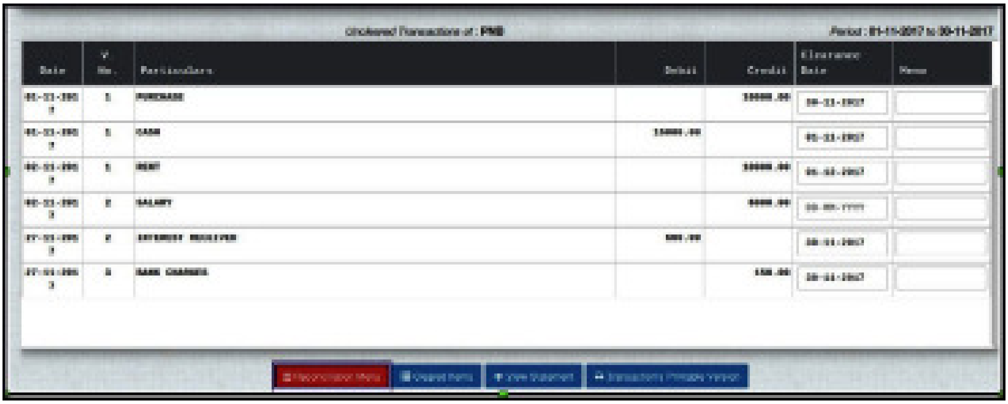


Fig 5.12 Transactions while entering clearance date

7. To show the Bank Reconciliation Statement

Click on 'View Statement' (See the figure 5.13)

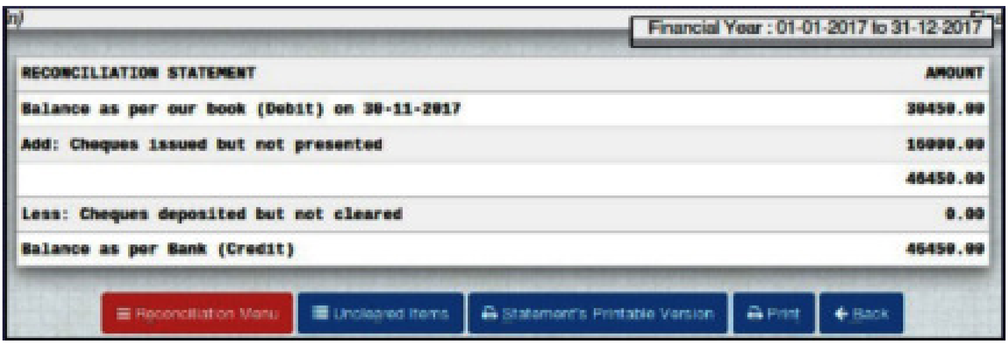



Fig 5.13 Bank Reconciliation Statement

If we want to see the Cleared Transactions, Click on Cleared Items (See the figure 5.14)

If we want to see the Uncleared Transactions.
Click on Uncleared Items.

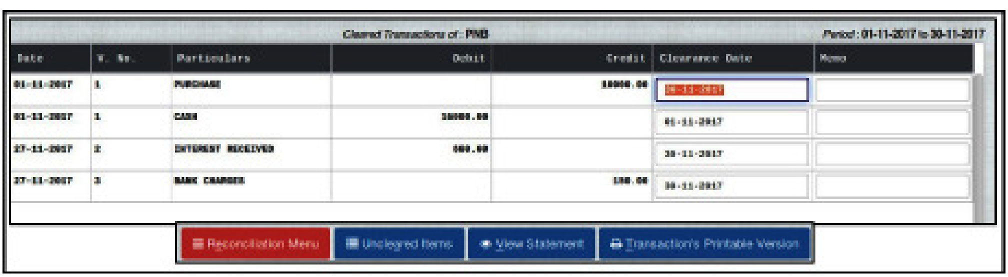


Fig 5.14 Cleared Transactions in Bank Reconciliation Statement

## Summary

- GNUKhata is a free and open source accounting software in Linux platform.
- To install GNUKhata extract the downloaded file and follow the instructions in Read me file.
- To create a new organisation, click on Create Organisation tab and enter the details such as Organnisation Name, Type, Financial year etc.
- GNUKhata has 13 groups and 16 subgroups, 4 groups are related with the Profit & Loss account and 9 are related with the Balance Sheet.
- There are 4 system generated ledger accounts in GNUKhata. They are Closing stock, Opening Stock, Profit & Loss Account and Stock at the beginning.
- The important options in Menu Bar are Master, Voucher, Report, Administration and Help.
- To create a ledger account, select Create Account option from the Master Menu.
- Ledger accounts created can be displayed, edited and deleted.
- Recording a transaction through a voucher interface is known as voucher entry. Important Vouchers are Receipts, Payment, Sale, Purchase, Contra, Journal etc.
- Report menu is used to view reports such as Ledger, Trial Balance, Profit & Loss Account, Balance Sheet etc.
- Bank Reconciliation Statement is prepared by an account holder to reconcile Cash Book balance and Pass Book balance on a particular date.
- To open Bank Reconciliation Statement, select the option Bank Reconciliation Statement from the Master Menu.

## I can

- describe and demonstrate the installation of Computerised Accounting System
- describe the features of GNUKhata as an accounting software such as grouping of accounts, codification, Account Masters and Voucher entry etc
- create Organisation and books of accounts
- construct Trial balance, Trading and Profit & Loss account and a Balance sheet and other reports
- prepare bank Reconciliation Statement on a particular date

## TE QUESTIONS

1. List out the features of GNUKhata.
2. Specify the path to create an Organisation in GNUKhata.
3. Name the System Generated Ledger Accounts.
4. Name the different ways of maitaining books of accounts in GNUKhata.
5. "GNUKhata has many security features." Explain.
6. Write a brief note on different account groups in GNUKhata.
7. List out the subgroups under Fixed Asset.
8. Name the account group instead of capital in case of not for profit organisation.
9. Name the options in menu bar in GNUKhata.
10. Describe the steps in Ledger Creation.
11. Write the path to display the ledger account.
12. Complete the following table:

| Voucher Type | Used To Record | Short cutKeys |
|---|---|---|
| Receipts | ? | F4 |
| Payments | Payment by cash or cheque | ? |
| ? | Cash and credit sales of goods | F6 |
| Purchase | ? | F7 |
| ? | Deposits or withdrawals of cash from bank | F8 |
| Journal | Adjustment entries | ? |

14. Describe the path to display the list of transactions in a period.
15. Show the steps to display the Profit and Loss Account.
16. Write the procedure to show Bank Reconciliation Statement.

## PE QUESTIONS

1. Enter the following transactions of Avinash Enterprises and Display Trial Balance , Profit and Loss account and Balance sheet

| Date | Transaction | Amount |
|---|---|---|
| 1-1- 2015 | Commenced business with cash | 2,00,000 |
| 5-1- 2015 | Purchased Furniture | 30,000 |
| 13-1- 2015 | Opened Bank account | 5,000 |
| 17-1- 2015 | Purchased goods from Jaison | 15,000 |
| 25-1- 2015 | Sold goods | 18,000 |
| 27-1- 2015 | Paid rent | 2,000 |
| 31-1-2015 | Received interest | 6,000 |

2. Enter the following transactions of Nature Enterprises Vallappuzha and Display Trial Balance, Profit and Loss account and Balance sheet:

| Date | Transaction | Amount |
|---|---|---|
| 1-1- 2017 | Started business with cash | 5,00,000 |
| 3-1- 2017 | Opened Bank account | 10,000 |
| 5-1- 2017 | Purchased Machinery | 1,00,000 |
| 8-1- 2017 | Purchased goods from Fadwa Traders | 30,000 |
| 10-1-2017 | Cash deposited in to bank | 2,00,000 |
| 12-1-2017 | Paid Wages | 2,000 |
| 15-1-2017 | Sold goods to Rincy | 28,000 |
| 17-1-2017 | Purchased goods | 20,000 |
| 18-1-2017 | Received Commission | 4,000 |
| 22-1-2017 | Returned goods to Fadwa Traders | 2,500 |
| 25-1-2017 | Sold goods | 32,000 |
| 28-1-2017 | Goods returned by Rincy | 900 |
| 31-1-2017 | Paid salary | 8,000 |

**Adjustment:**

1. Closing stock was valued at ₹ 10,000 as on 31-12-2017.

3. Ascertain the cash balance from the following transactions of Tom and Brothers for the month of January 2016 using GNUKhata Accounting Software.

| | |
|---|---|
| Jan 1 : Started business with cash | ₹ 70000 |
| Jan 4 : Bought office furniture | ₹ 10000 |
| Jan 7 : Cash purchases | ₹ 35000 |
| Jan 9 : Credit sales to Ajith | ₹ 20000 |
| Jan 9 : Salary to staff | ₹ 8000 |
| Jan 9 : Received cash from Ajith | ₹ 12000 |

4. Show Purchase Account and Sales Account from the following transactions of Sindhu Metals for the month of January 2016.

| | |
|---|---|
| 01/01/2016 Commenced business with cash | ₹ 100000 |
| 05/01/2016 Deposited in to SBI R | ₹ 50000 |
| 08/01/2016 Purchased goods from KiranTraders | ₹ 35000 |
| 10/01/2016 Purchased goods | ₹ 7000 |
| 13/01/2016 Sold goods | ₹ 10000 |
| 16/01/2016 Purchased goods by cheque | ₹ 20000 |
| 25/01/2016 Sold goods on credit to Abhijith for | ₹ 15000 |

5. Show the final accounts of Golden Stores Kozhikode from the following transactions.

| | |
|---|---|
| 01/06/2016 Commenced business with cash | ₹ 60000 |
| 02/06/2016 Purchased machinery | ₹ 20000 |
| 03/06/2016 Paid rent | ₹ 5000 |
| 04/06/2016 Cash deposited with State bank | ₹ 20000 |
| 05/06/2016 Purchased goods for | ₹ 9500 |
| 06/06/2016 Sold goods for cash | ₹ 4700 |
| 07/06/2016 Sold goods on credit to Mr. Suresh | ₹ 12000 |

6. Prepare Bank reconciliation statement of Riya Ltd. Idukki, as on 30-04-2016.

| | |
|---|---|
| Opening balance of SBI Bank Account (1-04-2016) Rs. | ₹ 60000 |
| 1-04-2016 Purchased goods and paid by cheque (Ch No. 411) | ₹ 30000 |
| 2-04-2016 Deposited into SBI Bank Account | ₹ 40000 |

| | | |
|---|---|---|
| 3-04-2016 | Cheque received (Ch No. 7531) was deposited | ₹ 30000 |
| 4-04-2016 | Paid salaries by cheque (Ch No. 413) | ₹ 15000 |
| 12-04-2016 | Interest credited in the passbook | ₹ 900 |
| 15-04-2016 | Bank charges debited in passbook | ₹ 350 |

Cheque No. 411 was presented in the bank on 30-04-2016. Cheque No. 7531 was cleared on on 05-05-2016. But Cheque No. 413 is not yet presented to the bank.

7. Prepare a Bank reconciliation statement of Hrithika Traders, Karimpuzha, as on 30th June 2017

| | | |
|---|---|---|
| 1-06-2017 | Started business with cash | ₹ 50000 |
| | Cash Deposited into Canara Bank | ₹ 20000 |
| | Issued cheque No 12345 to Vincent | ₹ 3000 |
| | Received a cheque (No 56789) from Abhijith | ₹ 1000 |
| 5-06-2017 | Cheque received from Abhijith Sent for collection | |
| | Paid rent by cheque (No 12346) | ₹ 6000 |

On verification of cash book with passbook, it is found that cheque No 56789 was collected on 2-07-2017 and cheque no 12345 collected by Vincent on 1-08-2017.

8. Enter the given transactions in appropriate accounting vouchers and prepare the Bank Reconciliation Statement of M/s Vivekananda Stores Kalpetta as on 31/01/2017

| | | |
|---|---|---|
| 01/01/2017 | Capital introduced by the proprietor | ₹ 100000 |
| 01/01/2017 | Opened a bank Account with Federal Bank | ₹ 50000 |
| 02/01/2017 | Purchased goods by cheque (No. 1001) | ₹ 15000 |
| 02/01/2017 | Received cheque (No. 5001) from Sunitha Traders | ₹ 25000 |
| 02/01/2017 | Issued a cheque (No. 1002) to Prasad and Co. | ₹ 8000 |
| 02/01/2017 | Withdrawn from bank for office use | ₹ 22000 |

On comparison of cash book with the passbook the following details were obtained.

a) Cheque No. 1001 was encashed on 08/01/2017.
b) Cheque No. 1002 was encashed on 02/02/2017.
c) Cheque received from Sunitha Traders collected on 10/02/2017.
d) All other transactions effected in the Bank on the same date.

9. Create the following ledgers in an accounting software and display the balance sheet as on 01/04/2017.

| | |
|---|---|
| Capital | ₹ 90000 |
| Tools and equipments | ₹ 40000 |
| Sundry Creditors | ₹ 50000 |
| Bank Loan | ₹ 55000 |
| Land and Buildings | ₹ 70000 |
| Plant and Machinery | ₹ 40000 |
| Motor vehicle | ₹ 75000 |
| Sundry Debtors | ₹ 50000 |
| Outstanding Rent | ₹ 3000 |
| Cash in hand | ₹ 30000 |

# APPENDIX

## Lab work-1

Create ledger accounts from the following transactions.

1-1-2017 Commenced business with cash ₹ 100000

3-1-2017 Purchased goods from Ayyoob on credit ₹ 20000

6-1-2017 Sold goods to Adwaith ₹ 10000

9-1-2017 Paid Salary ₹ 2000

**Procedure:**

1. Open GNUKhata -
   Applications → Office → GNUKhata
2. Create Organisation -
   Click on 'Create Organisation' → Enter the necessary details → Proceed
3. Create Admin → Enter the details → Create & Login
4. Create appropriate ledger account as given in the table.
   Master → Create account → Select Group →Sub group → Enter the Account name → Save

| Sl No | Group | Sub group | Name of Account | Opening Balance |
|---|---|---|---|---|
| 1 | Current Assets | Cash | Cash | ---- |
| 2 | Capital | None | Capital | ---- |
| 3 | Direct Expenses | None | Purchases | ---- |
| 4 | Current liabilities | Sundry Creditors for purchases | Ayyoob | ---- |
| 5 | Current Assets | Sundry Debtors | Adwaith | ---- |
| 6 | Direct Income | None | Sales | ---- |
| 7 | Indirect Expenses | None | Salary | ---- |

5. Display Ledger Account

   Report → List of Accounts

## Lab work-2

Following are the transactions extracted from the books of Hima Agencies, Elamkulam as on 31-12-2016.

2016 Jan 1 Started Business with Rs.1,00,000.
Opened a bank account with Federal bank ₹ 50,000.

Jan 2 Purchased machinery of ₹ 20,000.

Jan 31 Purchased goods from Vincent Ltd. Rs.₹ 15,000.

Feb 1 Sold goods to Naseem ₹ 35,000.

Feb 2 Returned goods to Vincent Ltd. ₹ 1000

Cash Sales ₹ 5,400

Feb 28 Returned goods by Naseem ₹ 500

Mar 1 Paid wages ₹ 2000

Paid Rent ₹ 3,000

Mar 2 Commission Received ₹ 1500

Mar 3 Purchased goods for ₹ 15,000 and paid cheque for the same.

Mar 4 Withdrew cash from bank for office use ₹ 10000

1. Display the Trial Balance.
2. Show the cash balance.
3. Display the list of transactions by using 'Find/Edit Voucher'

**Procedure :**

1. Open GNUKhata
   Applications → Office → GNUKhata
2. Create Organisation
   Click on 'Create Organisation' → Enter the necessary details
3. Create Admin - Enter the details
4. Create appropriate ledger account
   Master → Create account → Select Group →Sub group →Enter the Account name → Save

| Sl No | Group | Sub group | Name of ledger | Opening Balance |
|---|---|---|---|---|
| 1 | Capital | None | Capital | - |
| 2 | Current Assets | Cash | Cash | |
| 3 | Current Assets | Bank | Federal Bank | - |
| 4 | Fixed asset | Plant & Machinery | Machinery | - |
| 5 | Direct Expense | None | Purchases | - |
| 6 | Current liabilities | Sundry creditors for purchase | Vincent Ltd | - |
| 7 | Direct Income | None | Sales | - |
| 8 | Current Assets | Sundry Debtors | Naseem | - |

| | | | | |
|---|---|---|---|---|
| 9 | Direct Income | None | Purchase Return | - |
| 10 | Direct expense | None | Sales Return | |
| 11 | Direct expense | None | Wages | - |
| 12 | Indirect expense | None | Rent | - |
| 13 | Indirect Income | None | Commission Received | - |

5. Enter Vouchers (based on the table 5.9)

Voucher → Select appropriate voucher → Enter details

Table 5.9 Details of Voucher

| Date | Account name | Voucher | Function Key | Dr/ Cr | Amount |
|---|---|---|---|---|---|
| 01-01-2016 | Cash<br>Capital | Receipt | F4 | Dr<br>Cr | 1,00,000<br>1,00,000 |
| 01-01-2016 | Federal Bank<br>Cash | Contra | F8 | Dr<br>Cr | 40,000<br>40,000 |
| 02-01-2016 | Machinery<br>Cash | Payment | F5 | Dr<br>Cr | 20,000<br>20,000 |
| 31-01-2016 | Purchases<br>Vincent Ltd | Purchase | F7 | Dr<br>Cr | 15,000<br>15,000 |
| 01-02-2016 | Naseem<br>Sales | Sales | F6 | Dr<br>Cr | 35,000<br>35,000 |
| 02-02-2016 | Vincent Ltd.<br>Purchase Return | Purchase returns | Ctrl+2 | Dr<br>Cr | 1,000<br>1,000 |
| 02-02-2016 | Cash<br>Sales | Sales | F6 | Dr<br>Cr | 5,400<br>5,400 |
| 28-02-2016 | Sales Return<br>Naseem | Sales Return | Ctrl+1 | Dr<br>Cr | 500<br>500 |
| 01-03-2016 | Wages<br>Cash | Payment | F5 | Dr<br>Cr | 2,000<br>2,000 |
| 01-03-2016 | Rent<br>Cash | Payment | F5 | Dr<br>Cr | 3,000<br>3,000 |
| 02-03-2016 | Cash<br>Commission | Receipts | F4 | Dr<br>Cr | 1,500<br>1,500 |
| 03-03-2016 | Purchase<br>Federal Bank | Purchase | F7 | Dr<br>Cr | 15,000<br>15,000 |
| 04-03-2016 | Cash<br>Federal Bank | Contra | F8 | Dr<br>Cr | 10,000<br>10,000 |

6. Display Trial Balance

   Report → Trial Balance→ Set date from & to date→ Net Trial Balance→ View

7. Display Cash Balance

   Report → Ledger → Cash→ Uncheck Monthly Ledger (optional)→View

8. Display the list of transactions. (see figure 5.15)

   Voucher → Find/Edit Voucher →Select Criteria as Time Interval → Set from & to date → Search →View Printable Version

List of Transactions for Period: 01-01-2016 to 31-12-2016

| Date | Type | Dr Accounts | Cr Accounts | Dr Amounts | Cr Amounts | Narration |
|---|---|---|---|---|---|---|
| 01-01-2016 | Receipt | CASH | capital | 100000.00 | 100000.00 | |
| 01-01-2016 | Contra | federal bank | CASH | 50000.00 | 50000.00 | |
| 02-01-2016 | Payment | Machinery | CASH | 20000.00 | 20000.00 | |
| 31-01-2016 | Purchase | Purchase | XY LTD | 15000.00 | 15000.00 | |
| 01-02-2016 | Sales | NASEEM | SALES | 35000.00 | 35000.00 | |
| 02-02-2016 | Sales | CASH | SALES | 5400.00 | 5400.00 | |
| 02-02-2016 | Purchase Return | XY LTD | PURCHASE RETURN | 1000.00 | 1000.00 | |
| 28-02-2016 | Sale Return | SLES RETURN | NASEEM | 500.00 | 500.00 | |
| 01-03-2016 | Payment | WAGES | CASH | 2000.00 | 2000.00 | |
| 01-03-2016 | Payment | RENT | CASH | 3000.00 | 3000.00 | |
| 02-03-2016 | Receipt | CASH | COMMISSION RCD | 1500.00 | 1500.00 | |
| 03-03-2016 | Purchase | Purchase | federal bank | 15000.00 | 15000.00 | |
| 04-03-2016 | Contra | CASH | federal bank | 10000.00 | 10000.00 | |

Fig 5.15 Output

## Lab work - 3

Prepare Profit and Loss Account and the Balance Sheet of Fidha Traders, Edappalam as on 31-03-2017 from the details given below:

Balance Sheet as on 01-4-2016

| Liabilities | Rs | Assets | Rs |
|---|---|---|---|
| Creditors | 24000 | Cash | 30000 |
| Capital | 150000 | SBI | 25000 |
| | | Debtors | 9000 |
| | | Stock | 10000 |
| | | Furniture | 30000 |
| | | Machinery | 70000 |
| | **174000** | | **174000** |

Summary of transactions for the year ending 31-03-2017 are given below:

| | | |
|---|---|---|
| 1. | Rent paid | 5000 |
| 2. | Salaries | 3000 |
| 3. | Wages | 3000 |
| 4. | Purchases | 80000 |
| 5. | Sales | 100000 |
| 6. | Interest received | 1000 |
| 7. | Closing stock | 30000 |

**Procedure**

Steps:

1. Open GNUKhata -
   Applications →Office →GNUKhata
2. Create Organisation -
   Click on 'Create Organisation' → Enter the details
3. Create Admin - Enter the details
4. Create appropriate ledger account (except Opening Stock) -
   Master → create account→ Select Group→Sub group →Enter the Account name → Save

| Sl No | Group | Sub Group | Name of ledger | Opening Balance |
|---|---|---|---|---|
| 1 | Capital | None | Capital | 150000 |
| 2 | Current Assets | Bank | SBI | 25000 |
| 3 | Current Assets | Sundry Debtors | Debtors | 9000 |
| 4 | Current Assets | Cash | Cash | 30000 |
| 5 | Fixed Assets | Plant & Machinery | Machinery | 70000 |
| 6 | Fixed Assets | Furniture | Furniture | 30000 |
| 7 | Current liabilities | Sundry creditors for purchase | Creditors | 24000 |
| 8 | Indirect Expenses | None | Rent | -- |
| 9 | Indirect Expenses | None | Salaries | -- |
| 10 | Direct Expenses | None | Wages | -- |
| 11 | Direct Expenses | None | Purchases | -- |
| 12 | Direct Income | None | Sales | -- |
| 13 | Indirect Income | None | Commission Received | -- |

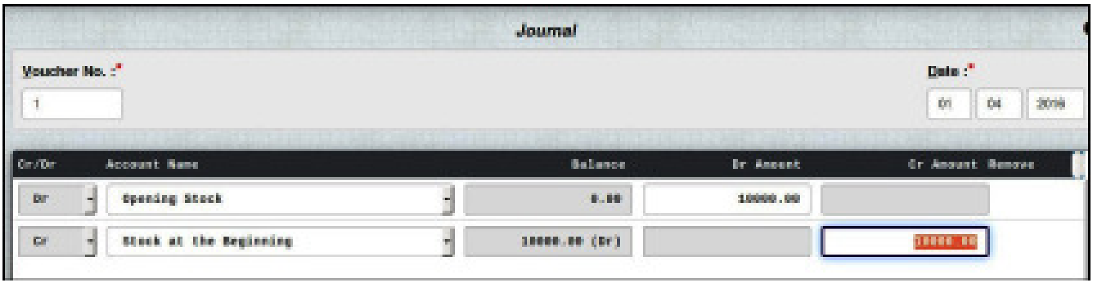
5. Enter the amount of Opening Stock.

   a. Master→ Edit Account→ Stock at the Beginning → Click on Edit → Enter the amount of Opening Stock

   b. To transfer the amount of Stock at the Beginning as Opening Stock

   Click on F9 (Journal Voucher) and enter the details given below:

| Date | Account name | Voucher | Function Key | Dr/ Cr | Amount |
|---|---|---|---|---|---|
| 01-04-2016 | Opening Stock<br>Stock at the Beginning | Journal | F9 | Dr<br>Cr | 10000<br>10000 |




6. Enter Vouchers (based on the table given below) -

   Voucher → Select Appropriate Voucher → Enter the details

| Date | Account name | Voucher | Function Key | Dr/ Cr | Amount |
|---|---|---|---|---|---|
| 31-03-2017 | Rent<br>Cash | Payment | F5 | Dr<br>Cr | 5000<br>5000 |
| 31-03-2017 | Salary<br>Cash | Payment | F5 | Dr<br>Cr | 3000<br>3000 |
| 31-03-2017 | Wages<br>Cash | Payment | F5 | Dr<br>Cr | 3000<br>3000 |
| 31-03-2017 | Purchase<br>Cash | Purchase | F7 | Dr<br>Cr | 80000<br>80000 |
| 31-03-2017 | Cash<br>Sales | Sales | F6 | Dr<br>Cr | 100000<br>100000 |
| 31-03-2017 | Cash<br>Interest Received | Receipt | F4 | Dr<br>Cr | 1000<br>1000 |
| 31-03-2017 | Closing Stock<br>P & L Account | Journal | F9 | Dr<br>Cr | 30000<br>30000 |

7. Display Profit and Loss Account
   Reports → Profit & Loss → Set From Date and To Date → View
8. Display Balance Sheet
   Reports → Balance Sheet → Set From Date and To Date → View → Show All Accounts

### Lab work - 4

Prepare Profit and Loss Account and the Balance Sheet of Meenangadi Traders, Wayanad as on 31-12-2016 from the details given below:
Balance Sheet as on 01-01-2016

| Liabilities | Rs | Assets | Rs |
|---|---|---|---|
| Capital | 100000 | Vijaya bank | 30000 |
| Irshad | 10000 | Robin | 16000 |
| Long term Loan | 15000 | Cash | 20000 |
| | | Machinery | 20000 |
| | | Furniture | 8000 |
| | | Building | 31000 |
| | **125000** | | **125000** |

Summary of transactions for the year ending 31-12-2016 are given below:

1. Rent paid 8000
2. Salaries 4000
3. Wages 2000
4. Purchases 50000
5. Sales 75000
6. commission received 500

Following Adjustments are to be made after closing the accounts.

1. Closing stock Rs.7600
2. Depreciate machinery @10%
3. Outstanding Wages Rs.500
4. Prepaid rent Rs. 1000

**Procedure**

1. Open GNUKhata -
   Applications → Office → GNUKhata
2. Create Organisation -
   Click on 'Create Organisation' → Enter the details
3. Create Admin - Enter the details
4. Create appropriate ledger account (except Opening Stock) -
   Master → create account → Select Group →Sub group → Enter the Account name → Save

| Sl No | Group | Sub Group | Name of ledger | Opening Balance |
|---|---|---|---|---|
| 1 | Capital | None | Capital | 100000 |
| 2 | Current Assets | Bank | Vijaya Bank | 30000 |
| 3 | Current Assets | Sundry Debtors | Robin | 16000 |
| 4 | Current Assets | Cash | Cash | 20000 |
| 5 | Fixed Assets | Plant& Machinery | Machinery | 20000 |
| 6 | Fixed Assets | Building | Building | 31000 |
| 7 | Fixed Assets | Furniture | Furniture | 8000 |
| 8 | Current liabilities | Sundry creditors for purchase | Irshad | 10000 |
| 9 | Loans (Liability) | Unsecured | Long term loan | 15000 |
| 10 | Indirect Expenses | None | Rent | -- |
| 11 | Indirect Expenses | None | Salaries | -- |
| 12 | Direct Expenses | None | Wages | -- |
| 13 | Direct Expenses | None | Purchases | -- |
| 14 | Direct Income | None | Sales | -- |
| 15 | Indirect Income | None | Commission Received | -- |
| 16 | Indirect Expenses | None | Depreciation | -- |
| 17 | Current Liabilities | Sundry creditors for Expenses | Outstanding wages | -- |
| 18 | Current Assets | Loans & Advances | Prepaid Rent | -- |

5. Enter Vouchers (based on the table given below) -
   Voucher → Select Appropriate Voucher → Enter the details

| Date | Account name | Voucher | Function Key | Dr/ Cr | Amount |
|---|---|---|---|---|---|
| 31-12-2016 | Rent<br>Cash | Payment | F5 | Dr<br>Cr | 8000<br>8000 |
| 31-12-2016 | Salary<br>Cash | Payment | F5 | Dr<br>Cr | 4000<br>4000 |
| 31-12-2016 | Wages<br>Cash | Payment | F5 | Dr<br>Cr | 2000<br>2000 |
| 31-12-2016 | Purchases<br>Cash | Purchase | F7 | Dr<br>Cr | 50000<br>50000 |
| 31-12-2016 | Cash<br>Sales | Sales | F6 | Dr<br>Cr | 75000<br>75000 |
| 31-12-2016 | Cash<br>Commission Received | Receipt | F4 | Dr<br>Cr | 500<br>500 |

| | | | | | |
|---|---|---|---|---|---|
| 31-12-2016 | Closing Stock<br>Profit and<br>Loss Account | Journal | F9 | Dr<br>Cr | 8000<br>8000 |
| 31-12-2016 | Depreciation<br>Machinery | Journal | F9 | Dr<br>Cr | 2000<br>2000 |
| 31-12-2016 | Wages<br>Wages<br>outstanding | Journal | F9 | Dr<br>Cr | 500<br>500 |
| 31-12-2016 | Prepaid Rent<br>Rent | Journal | F9 | Dr<br>Cr | 1000<br>1000 |

6. Display Profit and Loss Account
   Reports → Profit & Loss → Set From Date and To Date → View
7. Display Balance Sheet
   Reports → Balance Sheet → Set From Date and To Date → View → Show All Accounts

### Lab work - 5

From the following, prepare final accounts of Tisha Electronics, Kannur

Balance as on 01-01-2016

| Name of Accounts | Amount (Dr.) | Amount (Cr.) |
|---|---|---|
| Opening Stock | 10,000 | |
| Cash | 2,20,000 | |
| Bank | 40,000 | |
| Sundry Debtors | 35,000 | |
| Bills payable | | 20,000 |
| Bills Receivable | 15,000 | |
| Sundry Creditors | | 40,000 |
| Furniture | 40,000 | |
| Land and Buildings | 3,50,000 | |
| Capital | | 8,00,000 |
| Vehicles | 1,50,000 | |
| **Total** | **8,60,000** | **8,60,000** |

| | | |
|---|---|---|
| 4-1- 2017 | Purchased Machinery | 60,000 |
| 9-1- 2017 | Purchased goods | 35,000 |
| 14-1-2017 | Cash withdrawn from bank for office use | 4,000 |
| 19-1-2017 | Paid wages | 3,000 |
| 22-1-2017 | Sold goods Arshad | 4,400 |
| 28-1-2017 | Received rent | 1,500 |
| 31-1-2017 | Paid insurance | 7,200 |

**Adjustment:**

1. Closing stock valued at Rs.22,000 as on 31-12-2017
2. Outstanding wages Rs. 500
3. Prepaid insurance Rs 2,000
4. Provide depreciation @ 10% on furniture.
5. Rent accrued Rs 1,000.

**Solution:**

Step 1: Open GNUKhata
Applications → Office → GNUKhata

Step 2: Create Organisation
Click on 'Create Organisation' → Enter the details → Proceed

Step 3: Create Admin
Enter the details → Create & Login

Step 4: Create appropriate ledger account and enter opening balance
Master→ create account → Select Group → Select Sub group →Type Account name → Opening Balance → Save

| Group | Sub group | Account name | Opening Balance |
|---|---|---|---|
| System generated account need not be created | ---- | Opening stock | --- |
| Current assets | Cash | Cash | 2,20,000 |
| Current assets | Bank | Bank | 40,000 |
| Current assets | Sundry Debtors | Sundry Debtors | 35,000 |
| Current Liabilities | Bills Payable (Create new sub group) | Bills payable | 20,000 |
| Current assets | Bills Receivable (Create new sub group) | Bills Receivable | 15,000 |
| Current Liabilities | Sundry Creditors for Purchase | Sundry Creditors | 40,000 |
| Fixed Assets | Furniture | Furniture | 40,000 |
| Fixed Assets | Land | Land & Buildings | 3,50,000 |
| Capital | None | Capital | 8,00,000 |
| Fixed Assets | Vehicles (Create new sub group) | Vehicles | 1,50,000 |
| Fixed Assets | Plant & Machinery | Machinery | --- |
| Direct Expenses | None | Purchases | --- |
| Direct Expenses | None | Wages | --- |
| Current Assets | Sundry Debtors | Arshad | --- |
| Direct Income | None | Sales | --- |
| Indirect Income | None | Rent Received | --- |
| Indirect Expenses | None | Insurance | -- |

| | | | |
|---|---|---|---|
| System generated account need not be created | ---- | Closing Stock | --- |
| Current Liabilities | Sundry Creditors for Expenses | Wages outstanding | --- |
| Current Assets | Loans and Advance Insurance | Prepaid | --- |
| Indirect expenses | None | Depreciation | --- |
| Current Assets | Accrued Income (Create new sub group) | Rent accrued | --- |

Step 5: Enter Vouchers based on the table given below

Voucher → Select appropriate voucher → Enter details

| Date | Account name | Voucher | Function Key | Dr/ Cr | Amount |
|---|---|---|---|---|---|
| 1-1-16 | Opening stock<br>stock at the beginning | Journal | F9 | Dr<br>Cr | 10000<br>10000 |
| 4-1-17 | Machinery<br>Cash | Payment | F5 | Dr<br>Cr | 60,000<br>60,000 |
| 9-1-17 | Purchases<br>Cash | Purchase | F7 | Dr<br>Cr | 35,000<br>35,000 |
| 14-1-17 | Cash<br>Bank | Contra | F8 | Dr<br>Cr | 4,000<br>4,000 |
| 19-1-17 | Wages<br>Cash | Payment | F5 | Dr<br>Cr | 3,000<br>3,000 |
| 22-1-17 | Arshad<br>Sales | Sales | F6 | Dr<br>Cr | 4,400<br>4,400 |
| 28-1-17 | Cash<br>Rent Received | Receipt | F4 | Dr<br>Cr | 1,500<br>1,500 |
| 31-1-17 | Insurance<br>Cash | Payment | F5 | Dr<br>Cr | 7,200<br>7,200 |
| 31-12-17 | Closing Stock<br>Profit & Loss a/c | Journal | F9 | Dr<br>Cr | 22,000<br>22,000 |
| 31-12-17 | Wages<br>Wages outstanding | Journal | F9 | Dr<br>Cr | 500<br>500 |
| 31-12-17 | Prepaid Insurance<br>Insurance | Journal | F9 | Dr<br>Cr | 2,000<br>2,000 |
| 31-12-17 | Depreciation<br>Furniture | Journal | F9 | Dr<br>Cr | 4,000<br>4,000 |
| 31-12-17 | Rent accrued<br>Rent Received | Journal | F9 | Dr<br>Cr | 1,000<br>1,000 |

Step 6: Display Trial Balance
Report → Trial Balance

Step 7: Display Profit and Loss account
Report → profit and Loss account

Step 8: Display Balance Sheet
Report → Balance sheet

UNIT 6

# DATABASE MANAGEMENT SYSTEM

**Key Concepts**



## Introduction

We have come across the term database in various occasions. The following example will give you more insight on the concept of 'database'.

Your school intends to prepare a new identity card for plus one students.

- What are the particulars to be collected for this purpose?

Name of the student, date of birth, address, course pursued, admission number, so on and so forth.

The task of manual collection of data is lot more easy if 50 students each are enrolled in science, commerce and humanities course. Physical handling of data (addition, deletion and updating) will not be strenuous, since the volume of data is less. If these student data are consolidated, we can call this as data base of students.

Similarly, Government of Kerala is collecting the details of entire students of our State as part of school automation using Sampoorna Software. Such a huge volume of data when manually collected would consume much time, labour, money and storage space. Usage of computer assisted programmes can act as an effective tool to overcome the above limitations.

Application of computer software in storing, processing and retrieving of large quantity of data helps in managing the database effectively and efficiently.

Software packages like 'LibreOffice Base', 'MS Access', 'Oracle' are very popular in handling database. A student of commerce should definitely master the skill of maintaining database software. Here in this unit we learn about the database management using free and open source software tool 'LibreOffice-'Base'.

## 6.1 Understanding and defining the database requirement

Creation of student database for the purpose of automating the school system using 'Sampoorna Software' is a tedious process involving enormous amount of data. Here we need to address the question of how such a huge volume of data is stored and retrieved for present and future requirements in a desired manner. Creating a good database will fulfil the above requirements permanently. Database can be termed as an organised collection of data with formally structured entity - attribute relationships. While designing this database a clear understanding of the following is required.

- Type of data to be stored

  (Here the consideration is for data types and the kind of operations performed)
- Size and volume of data to be handled
- Type of users and their requirements

  (Users can range from individuals, firms, multinational companies and government organisations)
- Frequency of data mobility (ie., data capturing, modification & retrieval)
- Type of data network used for data access (LAN/WAN).
- Data security requirements.
- Used as desktop database or server database

  (If volume of data and area of operation are limited then desktop database is preferred. Here the cost of data handling is negligible. Server database is preferred in case of handling data in large scale and which requires simultaneous updating of data by various users in a multiuser environment).

> ***Database:*** *A database is an organised collection of data. Data is always organised in data table consisting of rows and columns. It is indexed in such a way that the relevant information can be quickly and easily accessed, managed and updated.*

### 6.1.1 Identification of data to be stored in TABLES

Keeping in view of the above requirements, data is collected and arranged in a logical manner on the basis of their characteristics. Individual data with similar features or characteristics is put in a single field. For example, one field is allotted to store the name of students and another field for his admission no and so on. From the above we can



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conclude that a database consists of tables with various records and fields containing individual pieces of data. It is a collection of logically related records and files. This logical connection facilitates the integration of database.

Technological advancement expedited easier data handling, manipulation, storage and retrieval from the database using software. DBMS (Data Base Management System) software will help to organise data into database and facilitates its manipulation. LibreOffice offers very powerful DBMS software namely, Libre Office Base, which is robust and flexible.

**Let's know more...**

**Evolution of Databases**

*Databases have evolved early during the 1960s. They were in the form of hierarchical and network databases. In 1970s the era of relational database management started. Later during 1980s they turned out as object-oriented databases.*

*DataBase Management System (DBMS): It is a software application that facilitates interaction with administrators, end users, other applications, and to the database itself to capture and analyse data. Usually DBMS allows the creation, storage, updation, and maintenance and administration of databases*

## Try yourself

Your school is operating bus service for students. You are required to collect necessary data and organise them in different fields to take report using LibreOffice Calc.

### 6.1.2 Logical Structuring of data in TABLES

The above data collected as part of assignment can be arranged in a spreadsheet as shown in figure 6.1.

| Sl.No | Name of Student | Admn. No | Class | Sex | Place | Q1 Bus fee | Q1 bus fee collected |
|---|---|---|---|---|---|---|---|
| 1 | Aneesh | 3031 | C1 | M | Palakkad | 1300 | 1300 |
| 2 | Sunil | 2056 | H2 | M | Malampuzha | 1350 | 1350 |
| 3 | Jaffer | 2030 | C2 | M | Noorani | 1250 | 1250 |
| 4 | Simon | 3040 | S1 | M | Kanjikode | 1400 | 1400 |
| 5 | Jaya | 2035 | S2 | F | Palakkad town | 1280 | 1280 |
| 6 | Malu | 3045 | C1 | F | Malampuzha | 1350 | 1350 |
| 7 | Kathu | 2050 | C2 | F | Kanjikode | 1400 | 1400 |
| 8 | Sherin | 3051 | C1 | F | Noorani | 1250 | 1250 |
| 9 | Lakshmi | 2070 | S2 | F | Town stand | 1200 | 1200 |

Fig 6.1 School Transport

Here the data is systematically arranged in columns (fields). Each column represents data having same characteristics. Similarly, values from each column corresponding to a particular row together constitute a record. (Figure 6.2)

Record

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 18 | | | | | | | |
| 19 | Babu | 3085 | H1 | M | Palakkad town | 1280 | 0 |
| 20 | | | | | | | |

Fig 6.2 Record

In a database management system, the above information is stored in database in the forms of table having data fields and attributes. All details pertaining to an object is known as **entity** and each entity will have different features called **attributes**. In the above example, name of students, admission number, class, sex, etc. are the attributes of the entity School Transport. (Figure 6.3)

School Transport

Entity

Attributes

| Sl.No | Name of Student | Admn. No | Class | Sex | Place | Q1 Bus fee | Q1 bus fee collected |
|---|---|---|---|---|---|---|---|
| 1 | Aneesh | 3031 | C1 | M | Palakkad | 1300 | 1300 |
| 2 | Sunil | 2056 | H2 | M | Malampuzha | 1350 | 0 |
| 3 | Jaffer | 2030 | C2 | M | Noorani | 1250 | 1250 |

Fig 6.3 Entity and Attributes

LibreOffice Calc allows the users to store large amount of data in one spread sheet. Inability to establish relationship between various spreadsheets and data redundancy may limit the scope of this application to serve as a better database when compared to major database applications. Unlike spreadsheet application, data can be swiftly arranged in different tables and relationships can be established between them in database application. Retrieval of information based on the needs and requirements of the end user is easily possible while using such application.

Would it not be convenient to store data in different tables rather than arranging the same in a single table? Let us see the above example. Certain components of the above table do not undergo frequent changes. Say for example, variables like name of the student, admission number, sex, class, etc. will not change intermittently. At the same time Quarter 1 bus fee, Fee collected etc may vary from quarter to quarter. So keeping one single table in a database will result in duplication of information, which may end up in consumption of large storage space inconvience in handling data and may result in errors.

Instead of that we can design different tables like the one shown as in figure 6.4.

**Student_tbl (Table 1)**

| Name of Student | Admn. No. | Class | Sex | Place |
|---|---|---|---|---|
| Aneesh | 3031 | C1 | M | Palakkad |
| Sunil | 2056 | H2 | M | Malampuzha |
| Jaffer | 2030 | C2 | M | Noorani |
| Simon | 3040 | S1 | M | Kanjikode |
| Jaya | 2035 | S2 | F | Palakkad Town |

**Fee_tbl (Table 2)**

| Voucher No. | Admn. No. | Quarter name | Quarter fee |
|---|---|---|---|
| 1 | 3031 | Quarter 1 | 1300 |
| 2 | 2056 | Quarter 1 | 500 |
| 3 | 2031 | Quarter 1 | 800 |
| 4 | 3031 | Quarter 1 | 200 |
| 5 | 2056 | Quarter 1 | 1000 |

Fig 6.4 Student Table and Fee Table

The values in the first table will almost be static but data input is required more frequently in table 2. After creating different tables we can establish meaningful relationship between the above two tables, using a common identifier. In the above instance, Admission No.; can be a common identifier in both the tables. The common fields used to establish relationship between two tables are called the KEY FIELDS/Primary fields.

While observing student_tbl above, you can see that only one field with values are unique throughout this table. This unique value is 'admission no of the student'. The entire records can be identified or referred using this particular value. This is known as IDENTIFIER or PRIMARY KEY and each table must have one primary key. This primary key appears in the Fee_tbl also and is a FORIEGN KEY of that table defining the relationship between two tables.

You might have noticed that we have not given any fields for 'Total dues outstanding', 'Total Fee collected in each quarter' etc, in any of the tables. Data entry to these attributes is not required since these figures are derived by computing the same. Usually we generate these fields using Query.

*Relational database: A relational database refers to a database in which data is stored in multiple tables. These tables are linked to one another through common fields. It consists of collection of schemas, tables, queries, reports, views and other elements. Suppose, a person seeking hotel rooms for stay in Munnar, over internet, gets a list of vacancy position. This is made available through relational data model designed typically to organise the data spread across at various locations in to a reality model that supports the process of seeking information.*

## Try yourself

(1) Design a database with necessary tables for preparing progress report of students in commerce.

(2) Design a database with necessary tables for household receipts & payments.

From the above example, you might be familiar in designing database structure. It's time for us think in terms of integration of accounting information and computer database technology. Accounting can often use database for numerous processes like creating database of employees, payroll preparations, generating invoices, recording accounts receivables and payables as well as for tracking inventory.

"Is it possible to bring the example of student_transport mentioned above to an accounting perspective"?

There may be the following receipts and payments.

- Receipts - Bus fees collection, donations, contribution from PTA, teachers contributions etc.
- Payments may include repairs, wages to driver and other staff, fuel, insurance and tax, stationery, permit and fitness charges and consumable stores.

Considering all the above elements, the following tables are designed to suit our database requirements.

**Table Payment (table 3)**

| Account code | Expense Name | Expense amount |
|---|---|---|
| | | |
| | | |
| | | |

**Total Receipts(table 4)**

| Account code | Receipt Name | Receipt Amount |
|---|---|---|
| | | |
| | | |
| | | |

Fig 6.5 Receipts and Payments Table

After completing table designing, relationship between various tables has to be clearly defined.

## 6.2 Creation of Database

Now let us see how this can be applied in a database application – LibreOffice Base.

The following path can be used to open the data base application

*Applications → Office → LibreOffice Base*

The ensuing screen will look like as follows. (Figure 6.6)

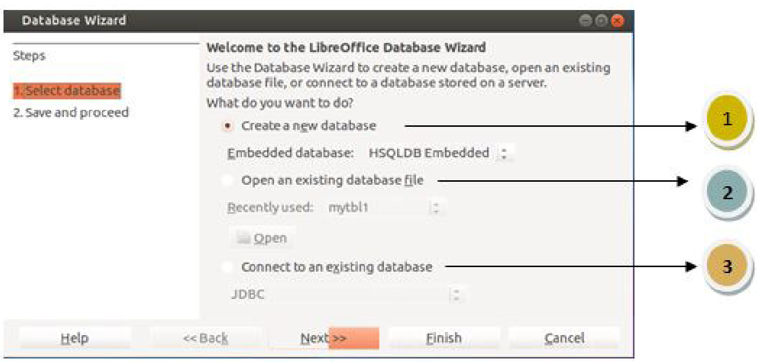



Fig 6.6 Database wizard window

1 This button is selected if the user intends to create a new database

2 For opening an already created database, this option is useful

3 This option is made use of to establish a Java Database Connectivity in an application programming interface.

"Create a new database" is the option for the user to create a new database and select "Next>>" button and subsequent screen will appear as shown in figure 6.7.

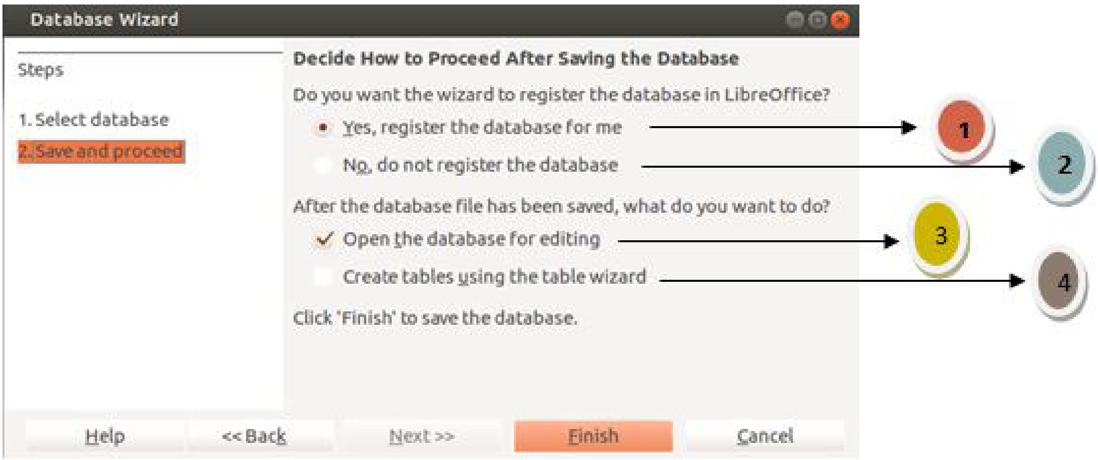



Fig 6.7 Creating a New Database

Registering the database options and what we intend to do after saving need to be answered here.

1. By default, the radio button will rest upon this option as you can see in figure 6.7. Select this option for registering the database. Registering enables the user to avail this database in other applications like spreadsheet
2. The database, if created only for one time purpose, then this option is more suitable. But user cannot import this database in other applications.
3. This check box will be selected by default. You can customise your database by creating necessary fields in tables
4. Saving the table with this check box selected will provide access directly to the tables carrying predesigned templates for various database creations.

Now press 

button and the application will take you to the next screen shown in figure 6.8.

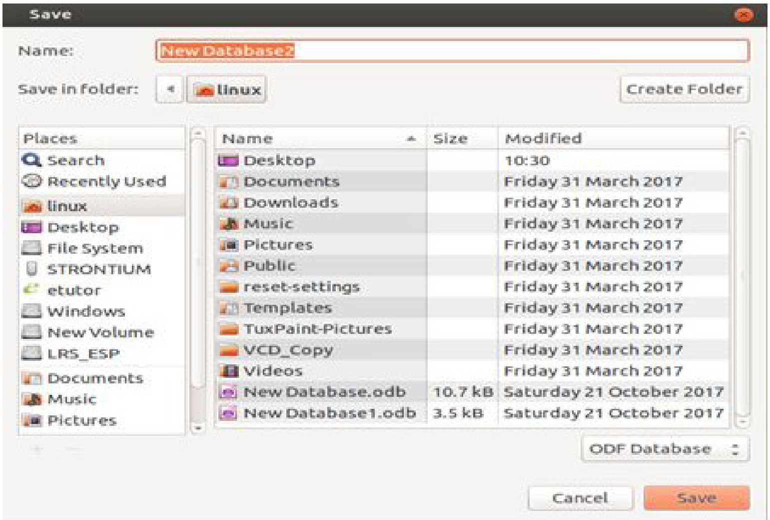



Fig 6.8 Saving New Database

Name of the database, storage location. etc., can be specified in the above screen (figure 6.8). Creation of new folder is also possible at this time. Press save and Base application by default, will provide an extension **ODB** to all the files saved.

The above process reaches its culmination on saving the file, resulting in popping up a new screen.

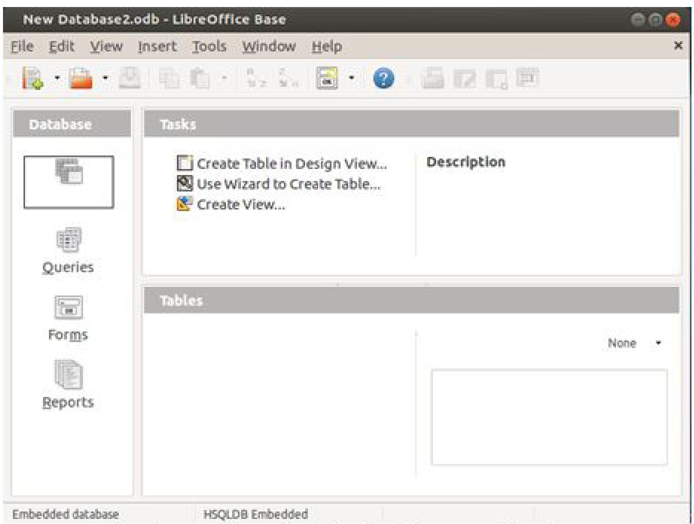



Fig 6.9 Database Objects Window

You can see the objects of base listed on the left pane of the above screen (figure 6.9).

1. Tables : Table is the simplest form of date storage. It consists of data logically arranged in rows and columns.
2. Queries : It is used to extract, append and modify data from a database. SQL(Structured Query Language) is most widely used language to handle queries.
3. Forms : The interface that allows the user to input, retrieve and manipulate data.
4. Reports : Presenting the information stored in a database in the required format using queries.

## 6.3 Creating Tables

The Table component appears as the first option on the database panel on the left hand side of the base window as seen in figure 6.10.


Fig 6.10 Table Component Panel

Click on 'Tables component' in the panel. This provides three options in the Tasks panel and 'Description window' give an explanation for each options when we click on it.

i. Create table in Design View...: This option is used to create a table by specifying the field names and properties, as well as the data types.

ii. Use Wizard to create Table....: This option allows choosing from a selection of business and table samples, which we can customise to create a table.

iii. Create view..... This option can be selected for creating tables and field names of our choice and the same could be made visible.

### 6.3.1 Creating Tables in Design View

Here we illustrate how one can create table in Design view.

**Click on Create Table in Design View**. This opens a Table Design window with four parts as shown in figure 6.11.

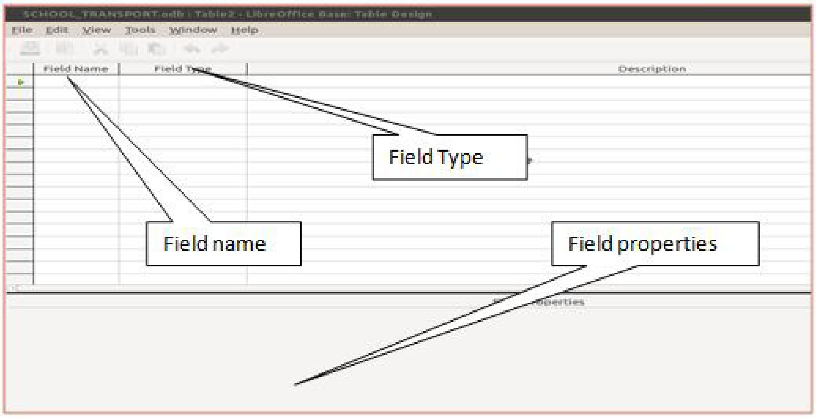



Fig 6.11 Table in Design view

a. Field Name: Here enter the name of various fields you wish to create. Better to use standard and easy to catch abbreviations, as these may be very frequently used while querying with database. Example: Student Identity Number may be entered as STUD_ID.

b. Field Type: It describes the nature of data to be included in fields. There are different data types. Example: The field name STUD_ID may be defined in terms of data type as Text[VARCHAR].(Extreme care should be shown while selecting data types as wrong definition of data types may render the whole data useless at a later stage)

c. Description: A very short description about the field name of data type may be given here, but not mandatory.

d. Field properties: This is used to define the properties or characteristics of field and its data types. If data type is selected then, only field properties will appear. Otherwise this area remains blank.

   i. Entry required: Two options available (Yes/No). This field cannot have a Null value. Choosing 'Yes' makes input of data to this field mandatory while 'No' makes input optional.

   ii. Length: Value entered here limits the maximum length/size permitted.

   iii. Default value: Enter a default value here. At the time of actual data entry, this value will be automatically appearing in each new record for the field selected.

   iv. Format example: It defines the "data display format", i.e. the format in which the particular data should be entered as the value in the field. E.g. negative number, thousands separator, format code, alignment etc.

### Entering field names and selecting data types

The figure 6.12 explains the steps to enter field names and data types.

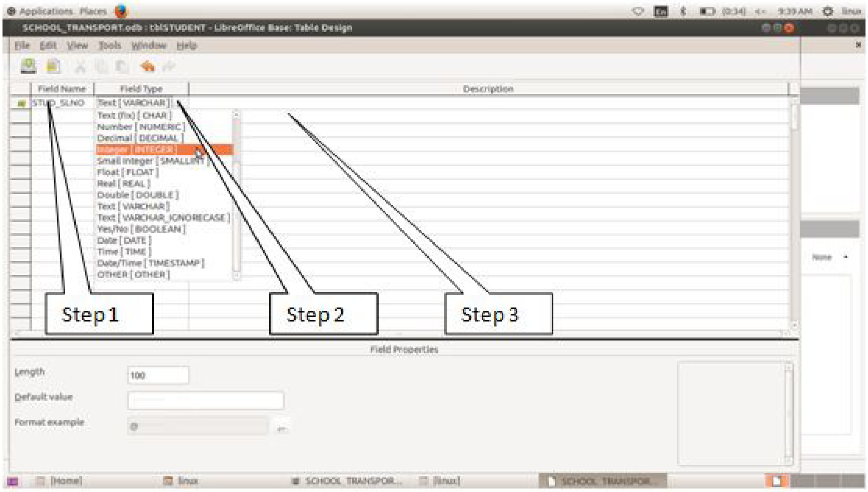



Fig 6.12 Field Names and Data Types

Step i. Enter name of the field. E.g. STUD_SNO

Step ii. On entering field name, 'Feld Type' tab becomes active. Click on navigation pointer of this field to get drop down list. Click to select the relevant data type. E.g.Text [VARCHAR]. At this point the Field properties panel in the bottom will also become active where property values can be changed.

a. Length: By default the format size is 100 for 'Text'. It may be changed depending upon the field length or width. E.g. 40

b. Default value: If there is no default value for the field, leave it blank. For example, if most of the students are coming from a particular place, we may set default value for STUD-PLACE by giving the name of that place.

c. Format example: Data input format, if any, may be given.

Step iii. The cursor control moves to description field. A short description of the data or field name may be appended, but no matter even if it is left blank. To move next click 'Enter Key'.

### 6.3.2 Connection between Data Types and Field Content

While entering field names at the time of table creation, we have to define the type of data to be entered in that field. This data type (field type) can be text, number, currency, date and time etc.

The different field types are listed as follows. (Figure 6.13).

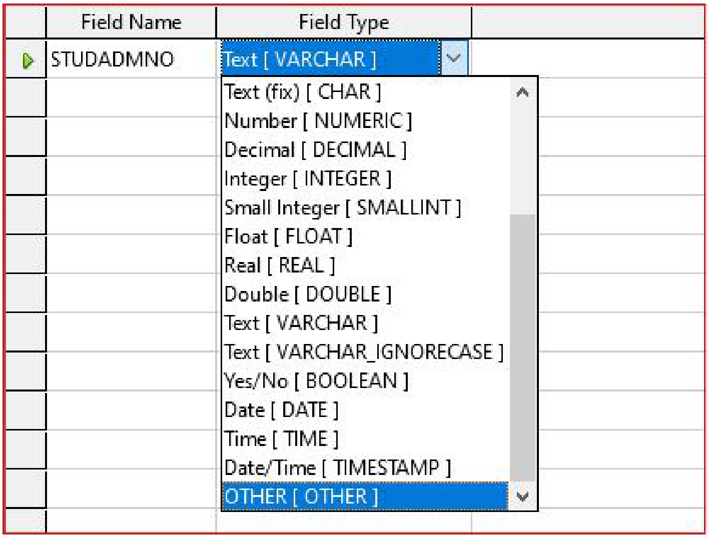



Fig 6.13 Display Field types

## Data Types in Base

You might have noticed the following introduction screen when attempting to create a database.(Figure 6.14).

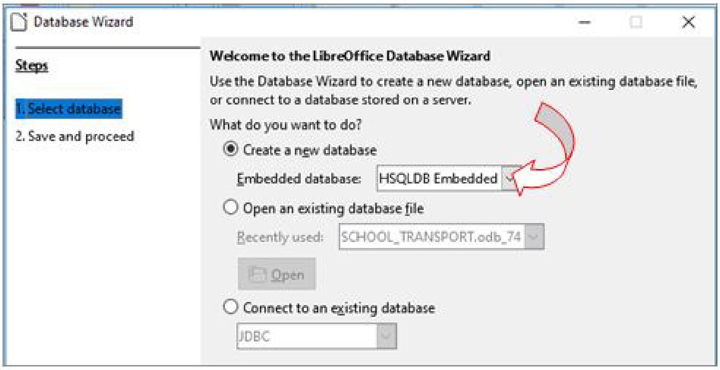



Fig 6.14 LibreOffice Base Introduction Screen

It is seen that the radio button embedded database **"HSQLDB Embedded "** is selected. What do you mean by this?

**HSQLDB** (***Hyper SQL Database***) is a relational database management system written in **Java.**

HSQLDB provides a rich set of data types to build our database.

**Meaning of Data Types**

In Computer Programming, a data type is simply a classification of data. Data types define particular characteristics of data that we intend to store or manipulate. The data will be manipulated according to the type or definition based on its characteristics. For example if Admission number of students is declared as "**Text** "type, then even though they are numbers, they cannot be subjected to mathematical calculations. If done so, it will return errors. Thus a clear understanding of various data types is very much essential while creating tables.

The following figure gives the classification of various data types.(Figure 6.15)

| | Category | Data Type | Feature | Positive Numbers | Negative Numbers |
|---|---|---|---|---|---|
| 1 | INTEGERS ( They are Whole numbers) | TINYINT | Smallest Integer type | 1 to 256 | -128 to 127 |
| | | SMALLINT | | up to 65,536 | -32,768 to 32,767 |
| | | INTEGER (INT) | commonly used integer | up to 4,294,967,296 | -2,147,483,648 to 2,147,483,647 |
| | | BIGINT | rarely used | 1.84467440737 X 1019 | |
| | | | | | |
| 2 | FLOATING POINT(Floating-point numbers are numbers with decimals, or real numbers) | DECIMAL | | | |
| | | NUMERIC | Unlimited Range | 10 places with two decimals | |
| | | DOUBLE | | A max of 15 decimal places | |
| | | REAL | Accuracy is not so good | more precise calculations and better rounding | |
| | | | | | |
| 3 | TEXT | VARCHAR | Variable or charecter | | |
| | | VARCHAR_IGNORECASE | A case insensitive version of VARCHAR. | | |
| | | CHAR or CHARACTER | A fixed size text field.If the text does not fill all the space, the text is padded with spaces. | | |
| | | LONGVARCHAR | Designed for large blocks of text | | |
| | | | | | |
| 4 | Date/Time | DATE | Format is YYYY-MM-DD | | |
| | | TIME | Format is HH:MM:SS | | |
| | | TIMESTAMP or DATETIME | A a combination of both the date and the time | | |
| | | | | | |
| 5 | OTHERS | BOOLEAN or BIT | For NULL state, TRUE and FALSE states | | |
| | | BINARY, VARBINARY, LONGVARBINARY | For storing binary data like images | | |

Fig 6.15 Classification of Data Types

### 6.3.3 Setting Primary Key

After entering all field names for the table under creation, we have to assign one field as primary or key field. To set primary key, follow the steps described below.

Step i. Select and right click on the empty box just to the left of the name of the field you wish to define as primary field. Now a popup menu appears (figure 6.16) with the desired option.

Step ii. Select and click on the "Primary Key" option available on the popup menu. Now the primary key symbol will appear in the empty area against the name of the field to which primary key has been set.

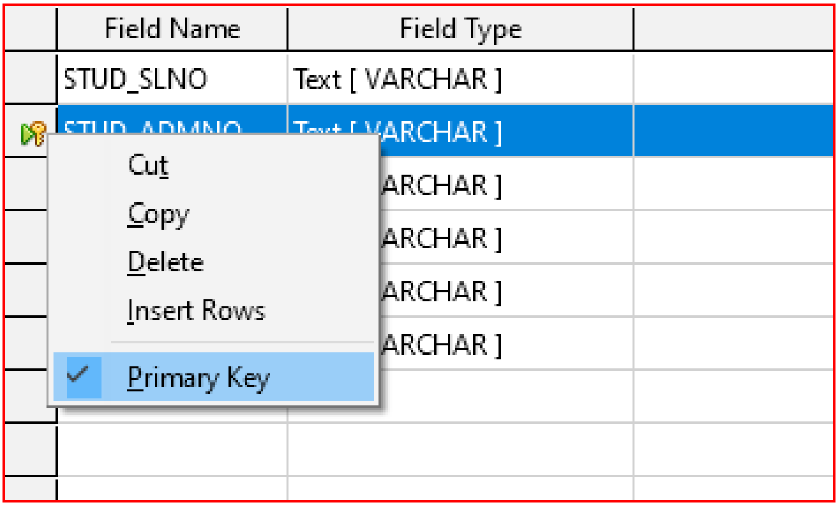



Fig 6.16 Setting Primary Key

**Saving the Table**

After entering the field names and selecting relevant data types, save the table. To save press Ctrl+S or click on the Save button on the left top corner of the Tool bar.

The default table name in Base is ‘Table1’. You can save the table with another name tblSTUDENT.(Figure 6.17)

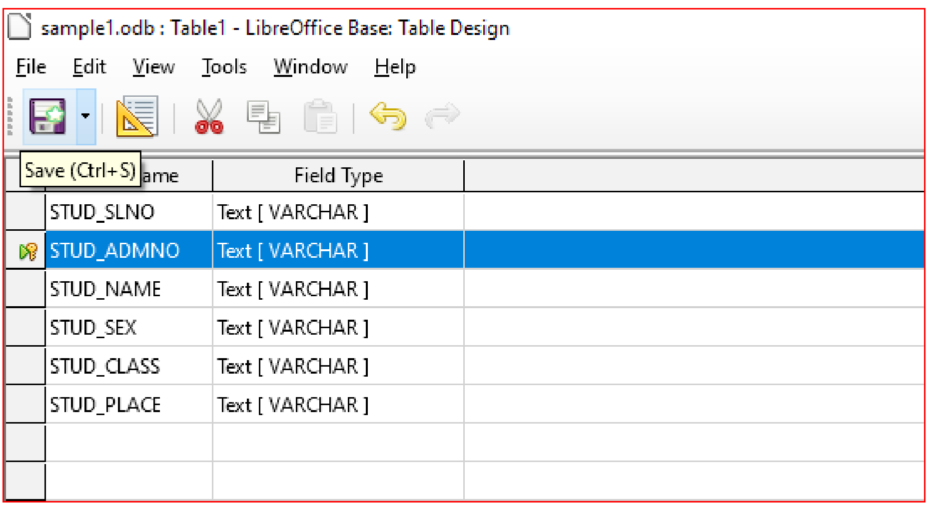



Fig 6.17 Saving the Table

Similarly, the next table for bus fare, i.e. '**tblBUSFEE'** has to be created, with the following fields.

| Field Name | Description of the field |
|---|---|
| FEE_SLNo | Receipt No of fees collected from students |
| STUD_ADNO | Admission no of the students |
| QUARTER_NAME | Name of each quarter must be specified<br>Eg. Quarter1, quarter 2 etc. |
| QUARTER_FEE | Amount of fees in each quarter |

The field names and corresponding data types must be entered. The primary key is assigned as FEE_SLNO. Now the table will look like as follows (Figure 6.18).

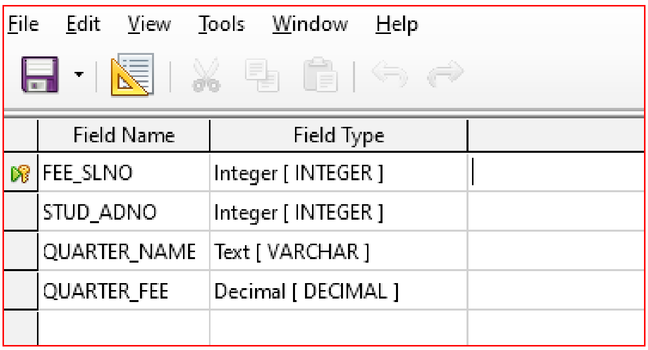



Fig 6.18 Create Table

Save the file by giving the name tblBUSFEE.(Figure 6.19).

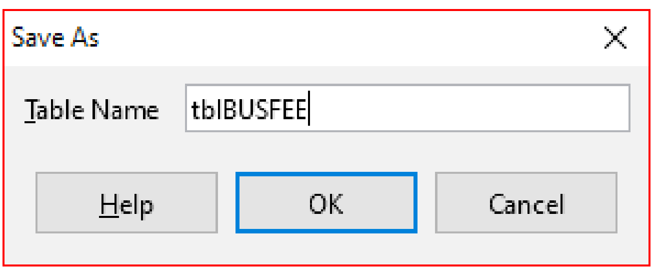



Fig 6.19 Saving Fees Table

After table creation, the table will be listed in the table panel which is shown in Figure 6.20.

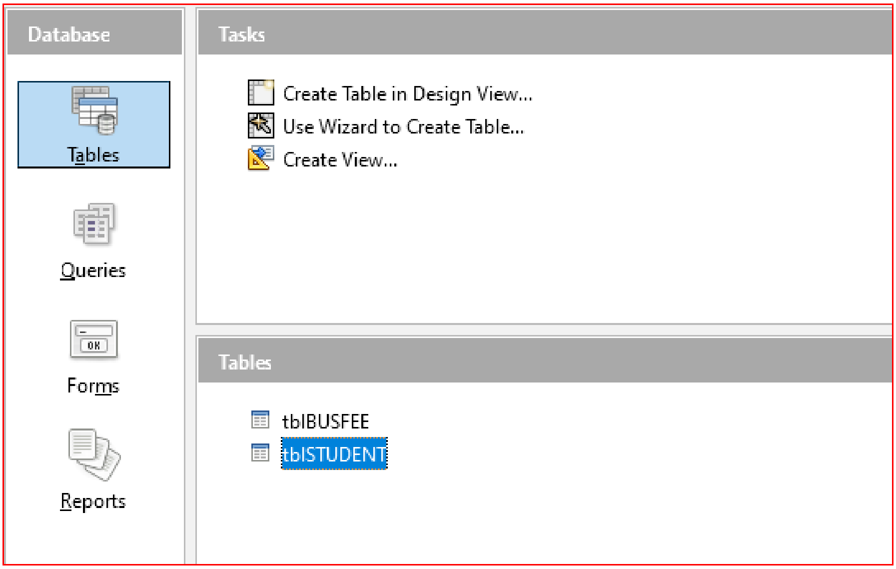



Fig 6.20 List of Table Created

You can click on the file name of tables to open table. A table when opened will look like as seen in Figure 6.21.

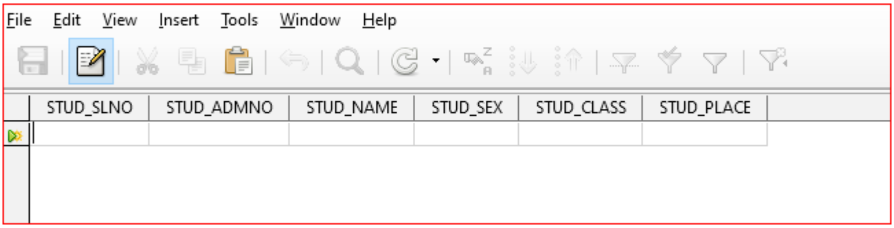



Fig 6.21 Table Data View

We can enter data directly into the fields of this table. See the figure 6.22.

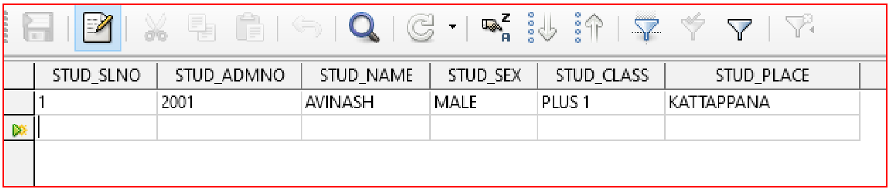



Fig 6.22 Table With One Record

### 6.3.4 Defining relationships

Relationship allows database to split and store data in different tables and provides linkage to different data items. **Relationships** (connections) between tables are made through primary keys and on the principle of field equality. Tables are connected in order to make queries, reports and forms with data located in multiple tables.

How can we create relationship between two tables ‘ tblSTUDENT and tblBUSFEE’ ?

As we know that first table holds student details like name, address, place etc. While the particulars of bus fee are entered in the second table.

- How do we know whether a particular student (first table) has paid the fees (second table) or not?

This question can be answered if relationship between these two tables can bee established. How can this be done?

The primary key set for the tblSTUDENT is ‘STUD_ADMNO’ and for tbl BUSFEE is ‘FEE_SLNO’. Another field is created in the tblBUSFEE table as ‘STUD_ADNO’ to hold the values of primary key values of first table. This provides a reference between two tables. In this case the primary key of the first table will be the FOREIGN KEY of second table. Here student admission number is the common identifier used in both the tables. Here it is not necessary to use the same field name in the two tables but ensure that the data type is the same.

The following path allows you to define relationships (Figure 6.23).

Tools > Relationships

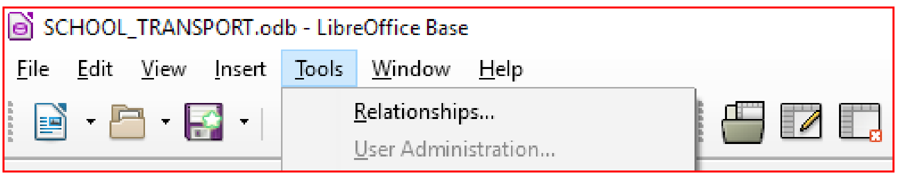



Fig 6.23 Relationship Option

The relationship menu contains the following buttons (Figure 6.24).


Fig 6.24 Add/Edit Relationship

On clicking the Relationship option, the ‘add tables’ window appears as in figure 6.25.

The Add Tables dialogue box will open in which you first select the name of the table and then press the Add button to add the tables which are to be displayed within the Relationship pane.

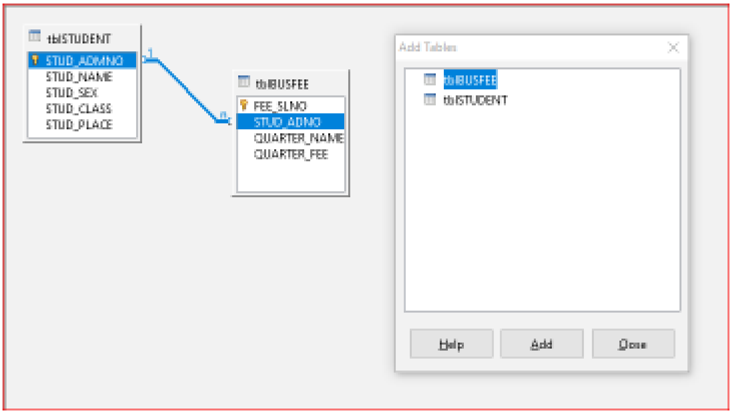



Fig 6.25  Adding tables to form Relationship

Use any of these ways to add a table to the Relation design window:

- Double-click the name of the table. In our case, do this for both the tblSTUDENT and tblBUSFEE
- Or, select the name of the table and then click Add for each table.

A relationship can be created via the drag and drop method by following the given steps.

1. Position the cursor over the *STUD_ADMNO* field, which is the primary key of the *tblSTUDENT*
2. Press and hold down the left mouse button, and drag it to the *STUD_ADNO* field in the *tblBUSFEE* table, and then release the mouse button, then a connecting line forms between the two fields.
3. The **Relations** dialog box will open up;
4. Press the **Ok** button to create a relation.(Figure 6.26)

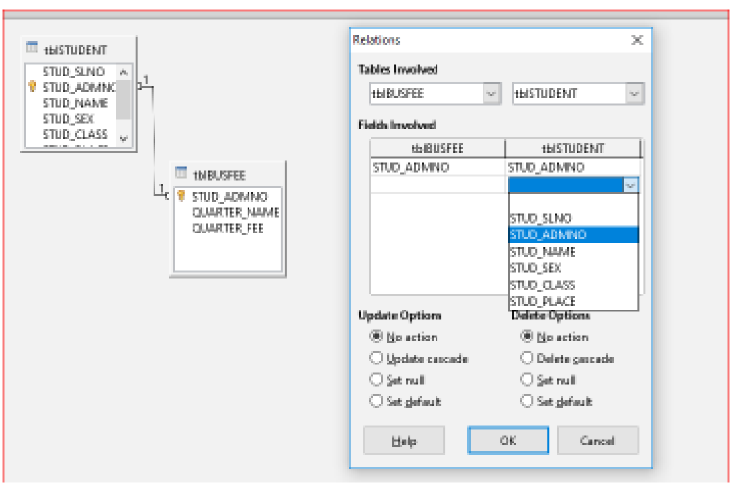



Fig 6.26 Creating Relationship

### 6.3.5 Editing and Deleting Relationships

The relationship created can be deleted by taking the 'EDIT' option. The path is

Tools → Relationship → Edit

- Right click on the line connecting between STUD_ADMNO and STUD_ADNO resulting to a popup menu.
- Select 'Edit' option to open 'relation window'
- Editing is possible in the relation window by changing over to the required fields from the 'fields involved' option.
- Delete option will permanently erase the relationship by selecting the line and press delete button.

**Let's assess**

1. *What do you mean by the term 'objects of database'?*
2. *List out the attributes of the entity - 'Voucher'.*
3. *............. is used to to retrive information from a data base.*
4. *SQL means ...........*
5. *The datatype of 'Age' is .............*

## 6.4 Creating a Database Form

Right now we have created tables and defined their relationships. We have learnt that Databases are used to store data. Tables help in organising the collection of data in a structured manner on the basis of data types. But, how is data, put into the database tables? Forms are used to do this. Forms help us to populate these tables swiftly while minimizing errors in data entry. A Form is a front end interface for data entry and editing.

Forms can be simple form as well as complex forms

i) Simple Form is one which consists of fields from a single table.

ii) Complex Forms are those consist of text, graphics, selection boxes and many other elements in addition to fields from many tables.

On the Base document we can see the component "Forms" on the left pane. In order to activate it click on the button"Forms" and task panel brings you two options.

- Create Forms in Design View
- Use Wizard to Create Forms.

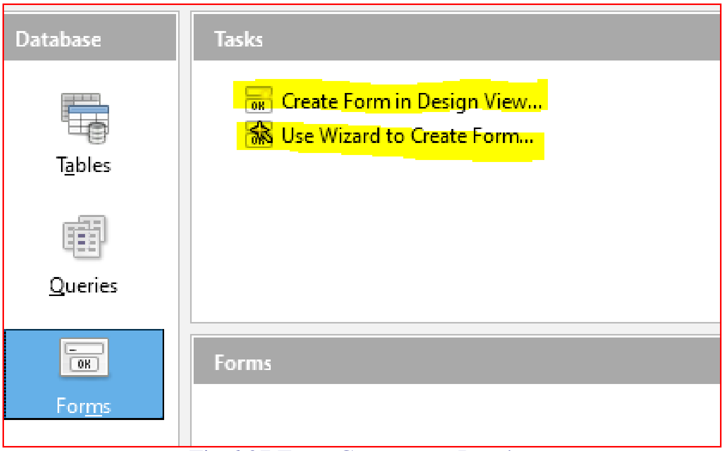



Fig 6.27 Form Component Panel

Let us discuss these two methods of creating forms.

### 6.4.1 Use Wizard to Create Form

It is the simplest and user friendly method of creating Forms. Click on the 'Use Wizard to Create Form' in the task pane. A form wizard pops up.

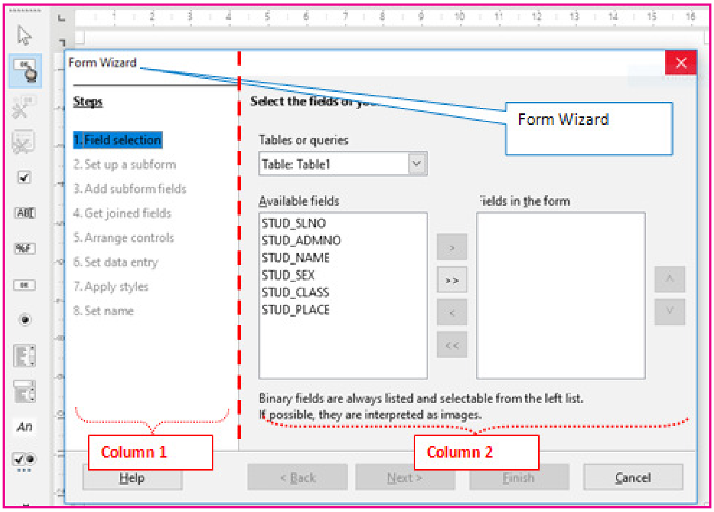



Fig 6.28 Form Creation Wizard

From figure 6.28 we can see the Form Wizard is organized in two columns.

The first column (left panel) is located in the left part which contains eight sequential steps that the wizard will go through. At the same time the second column (right panel) contains list of tables and queries and options from where you can pick available fields.

The following sequence is initiated for form creation.

## 1. Field Selection

The Field Selection window is given in figure 6.29. The form can be created either with tables or queries.

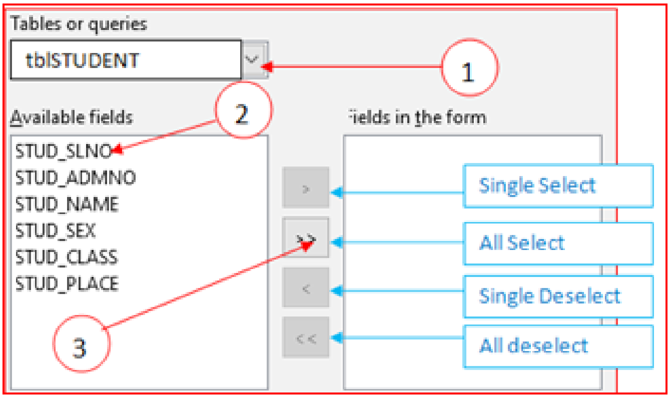



Fig 6.29 Field Selection Window

- Select the table - tblSTUDENT. Now all the fields of this table will be populated in 'Available Fields' option (See (1) above)
- Select the field you intend to have in the form by simply clicking it from the populated list. (See (2) above). Then click 'single right arrow' button to move this field to be the part of form.
- The application provides an option for "select or deselect" arrow buttons (3).

  Single right arrow - Moves fields one by one

  Double right arrow - Moves all the fields at once to the form list

  The left arrow buttons will reverse the above process.
- Click 'Next'.

## 2. Add Subform

A subform is a form used to show or enter data in another tables or queries. Giving affirmation in the check box concerned allows you to add subforms, if any, to be used along with the main form. Click 'Next' button if you don't need subform. If 'Add sub form' check box is not selected then the ensuing steps ( **'3' and '4' mentioned below will be skipped).**

## 3. Add Subform fields

## 4. Get joined fields

(Adding a sub form will be discussed later in this unit).

## 5. Arrange Controls

The controls in a form are meant to arrange label and field of the main form and sub forms. How do you want your form to look like and feel will be answered here. Different lay outs are readily available - 'Columnar: Labels on left', 'Columnar: Labels on top', 'As Data Sheet', and 'In Blocks'. You can make a selection from this layout and proceed to the next screen.

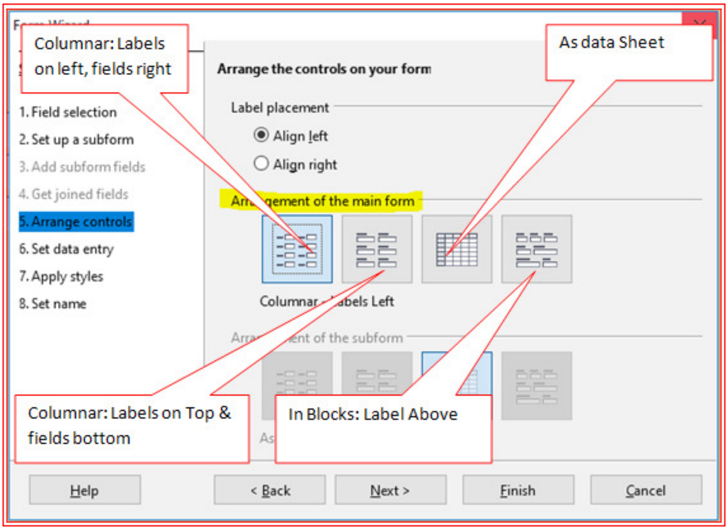



Fig 6.30 Arrange Controls

In this example, Columnar: Labels Left is selected. Then click 'Next'. See figure 6.30.

## 6. Set Data Entry

See figure 6.31.The mode of data entry is selected here. Two options are available at this point.

- Option for new data entry only. Existing data will not be displayed.
- The second option displays all data.

Depending on whether the boxes are checked or unchecked, it sets privileges to modify, delete or add data.

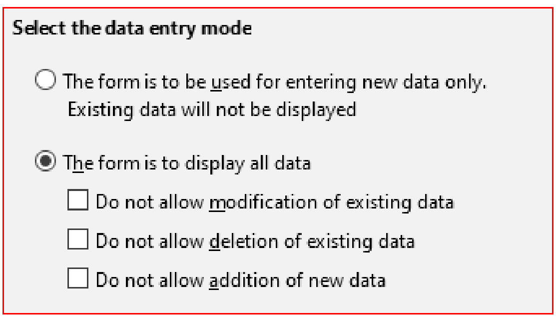



Fig 6.31 Selecting Data Entry Mode

If you don't want to create restrictions about the use of data, accept default settings: This form is to display all data, with no restrictions. To move to the next screen  click 'Next'.

## 7. Apply Styles

This step allows choosing the background colour and border for the form, from various colour styles and borders available by default.(Figure 6.32)

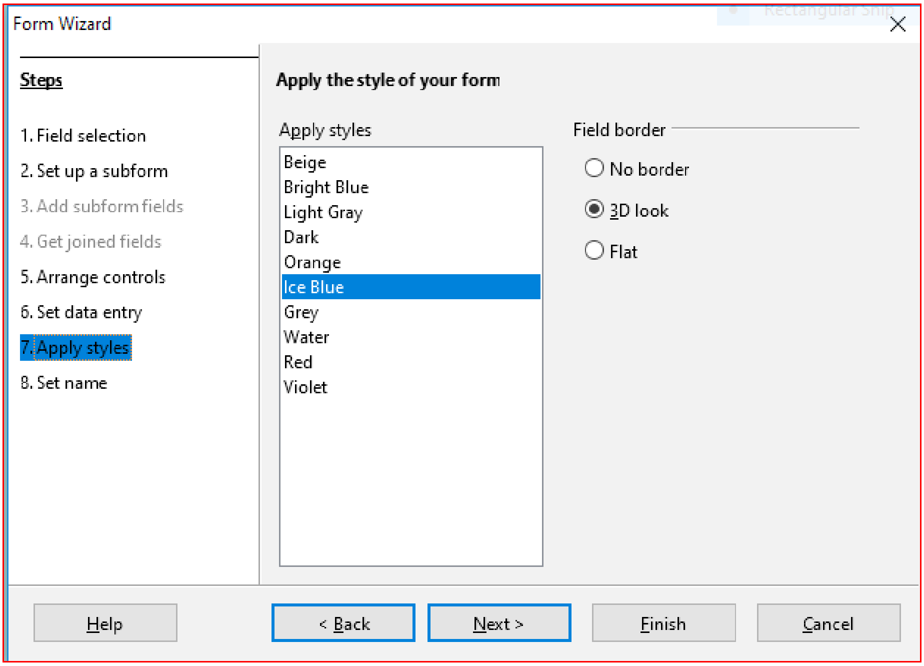



Fig 6.32 Apply Styles

Also select the Field border you want (For our form choose the 3-D look.) and click 'Next'.

## 8. Set Name for the Form

Suitable name can be given to your form in this step. The default name of the form will be same name of the table (tblSTUDENT). Name can be changed by entering a new name- 'frmSTUDENT'  in the field and click 'Finish'.

On clicking the 'Finish' button the form created will be displayed automatically. See figure 6.33.

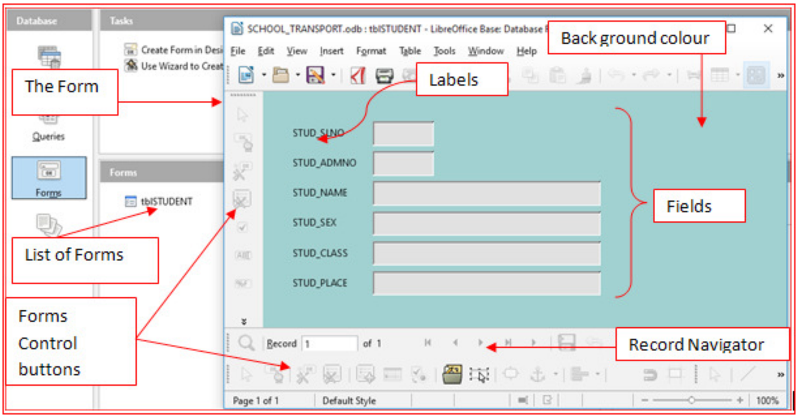



Fig 6.33 Display Form

### 6.4.2 Modifying the form

Modifying the form implies changing the styles, appearance, labels or setting field properties, adding fields, buttons, controls, list box, combo box, etc. In the above form, label names displayed will be the same field names given while designing tables. They need to be user friendly or understandably described. For example, the label "STUD_ADMNO" will convey no meaning at all. It will give right sense when label is changed as "Admission No." or "Enter Admission No."

#### a) Modifying Labels and Fields

See in figure 6.34. In order to modify a form, open it in Design Mode. For this, select the name of the form and right click on it to get the option “Edit..”. Clicking on “Edit” opens the form in Design mode. Modification to forms is permitted only under Design Mode.

Follow the steps given below the figure to modify the labels and fields of a ‘form’.

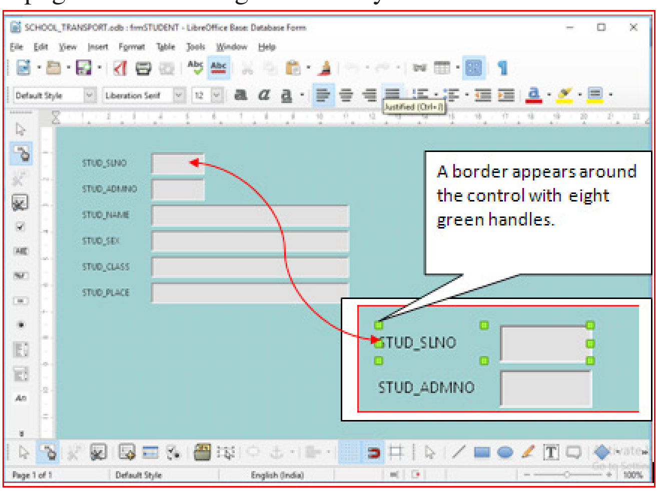



Fig 6.34 Selecting labels and fields.

- On clicking the label or fields, the entire control is selected.
- A green border appears around the control with eight handles (see fig 6.34).
- We can then drag and drop it anywhere in the form
- Use Ctrl+click to select only the label or field at a time
- Tab key is used to toggle between field or label for selection.
- Use Ctrl+Shift+Click to select more than one labels or fields at a time

To change label name, follow the steps given below the figure. Let us see how the label name STUD_ADMNO is changed to 'Admission No.'(Figure 6.35).

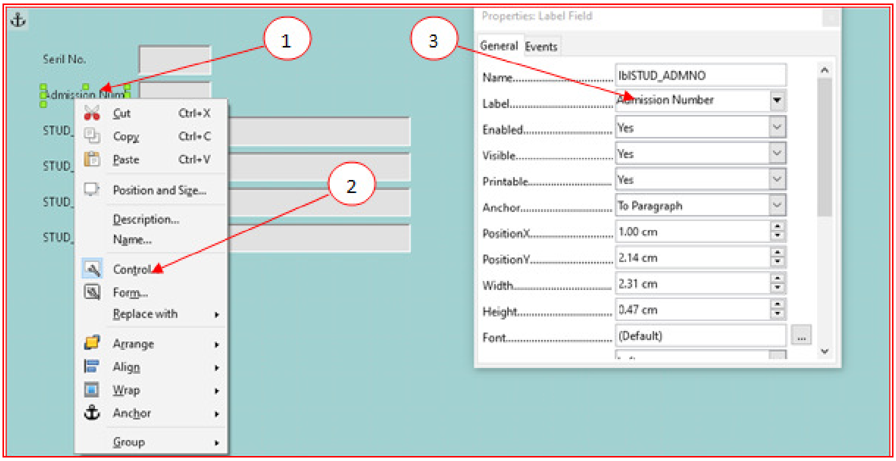



Fig 6.35 Changing labels using properties window

- Press Ctrl and click on label "STUD_ADMNO" (as seen in (1) above )
- Right click on label to select "Controls" from the pop up menu. (as seen in (2) above)
- A properties window is opened.
- Type " Admission Number" in the text box of label name (as seen in (3) above)
- Similarly all label names can be changed in the same manner narrated above.

*Properties window: Properties window provides a set of property values assigned for labels or fields. This can be properties of the form as well as that of its various components. It displays properties of the currently selected individual item or multiple items, as the case may be. For labels it has two Tabs: General and Events. For Fields it will have three Tabs: General, Data and Events.*

## b) Changing Fonts, Font size, etc.

Font and font size of labels can be altered by changing label properties relating to *Font* in the Properties window (Figure 6.36).



Downloaded from https:// www.studiestoday.com

- Open the 'Property dialogue box' by initiating the earlier steps mentioned in the case of altering label name.
- Move scroll bar down to locate Font properties (see (2) below)
- Click on the box with three dots on the extreme right to the font name to expand "Character" window. ( see (3) below)
- Select the required font type ( see (4) below) and desired font size (see (5) below)

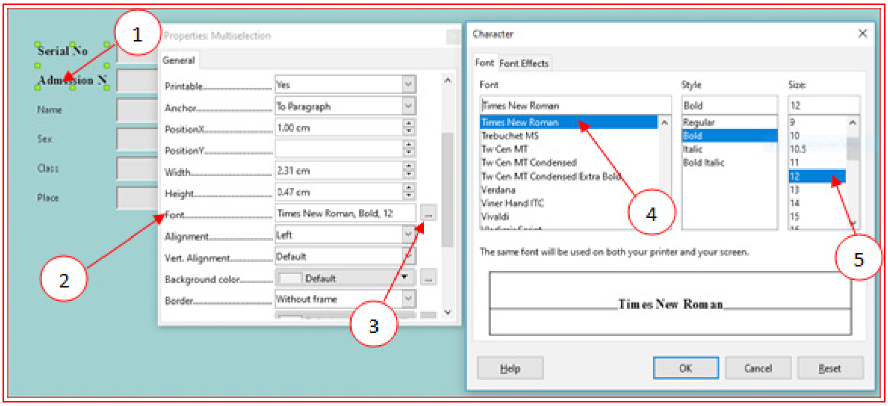


Fig 6.36 Changing Font and Font Size

## c) Align Labels and Fields

Labels and fields in the form can be aligned to right, left or, centre or bottom. For this, use multiple selections for labels or fields (Figure 6.37).

- Select the field or fields to be aligned or arranged
- Keeping selection active, right click to get the option "Align". When mouse pointer moves over "Align", various align options will be visible. Select the desired align option.

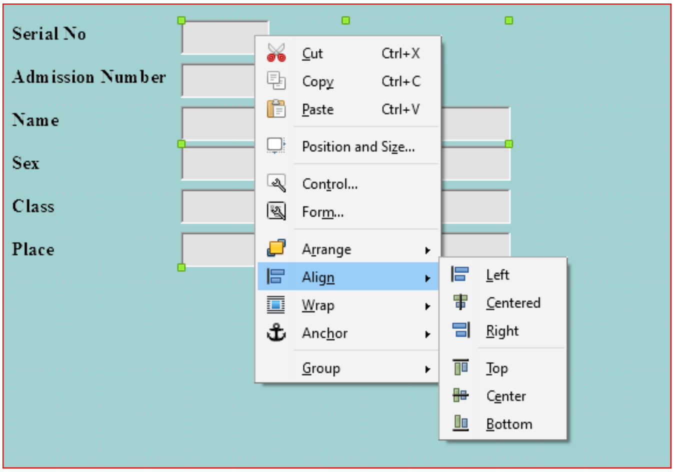


Fig 6.37 Align Control

## d) Giving Heading to the Form

For making the form meaningful and attractive, suitable 'heading' may be assigned. Let us see how the 'students data entry form' is given as label heading. (Figure 6.38)

- Activate the label field tool from the tool bar by clicking on it.
- Drag and draw a box by clicking and holding down the mouse pointer.
- Right click on the green border and select 'control' option from the popup menu.
- On the General Tab of the label property window, click in the text box against label and type the title " Students Data Entry Form"
- Scroll Down to label Font property. Click to expand font window and select font type and desired font size.

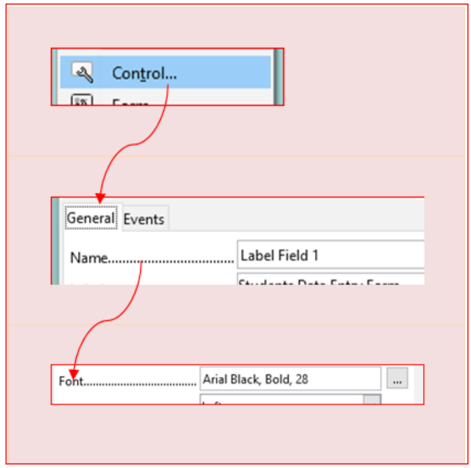



Fig 6.38 Label & Font Control

## e) Entering Data in to tables through Form

Now let us try to enter data using form.

- Open the form, 'frmSTUDENT' and enter the first student's details as shown in the figure 6.39.

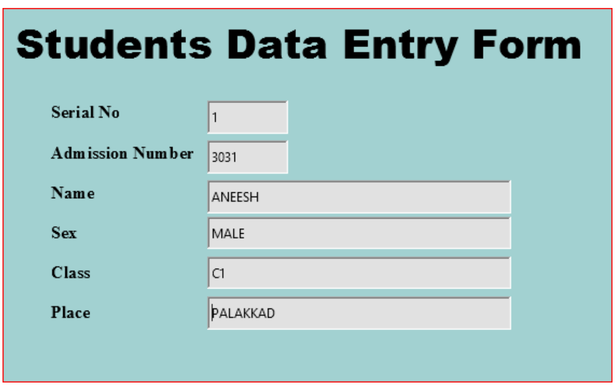



Fig 6.39 Data Entry Using Form

- After entering details of the first student, we can see that tblSTUDENT contains one record, which is as follows (Figure 6.40)

| STUD_SLNO | STUD_ADMNO | STUD_NAME | STUD_SEX | STUD_CLASS | STUD_PLACE |
|---|---|---|---|---|---|
| 1 | 3031 | ANEESH | MALE | C1 | PALAKKAD |
| | | | | | |

Fig 6.40 Table Showing Student Record

- When more student details are entered, table tblSTUDENT will get appended.

### f) Record Navigating and Editing

We can move through various records saved in the table using Form. Base Form provides record navigation tools with which we can locate any record and make modifications in data. See the figure 6.41.

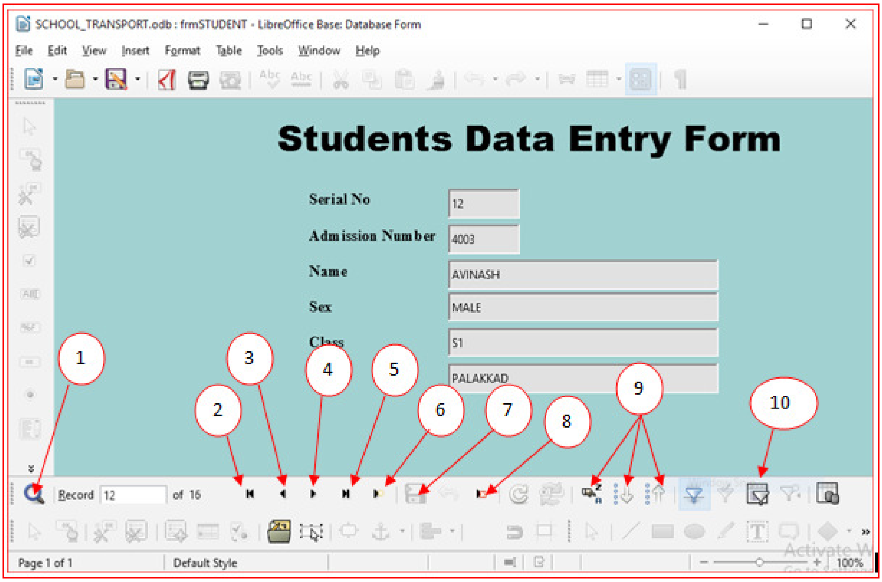



Fig 6.41 Record Navigation Control

The important controls are described below:

| | | |
|---|---|---|
| 1. Find Record | : | Searches a record based on criteria |
| 2. First Record | : | Moves to first record in the table |
| 3. Previous Record | : | Moves to the just previous record |
| 4. Next Record | : | Move to the next record |
| 5. Last Record | : | Moves to the Last record |
| 6. New Record | : | To enter data for a new record |
| 7. Saving Record | : | Saves the last changes done in a record |
| 8. Delete Record | : | Deletes the currently selected records |
| 9. Sort Record | : | Sorts all records within the data table |
| 10. Filter Record | : | Used to filter records |

### 6.4.3 Create Form in Design View

Creating a form using design view is discussed here. This method is not easy when compared to Wizard method. Choose the option - 'Create form in Design View' by clicking on it.

Now a form design window appears. Working with form creation under this method is not user friendly. Here we have to add labels and fields by ourselves. Similarly connection between form, tables and fields etc., are to be set carefully using 'Controls'. However this method may be illustrated in the creation of 'tblBUSFEE' table.

A blank Form creation page will come up. Few important 'controls' are familiarised in the given figure 6.42.

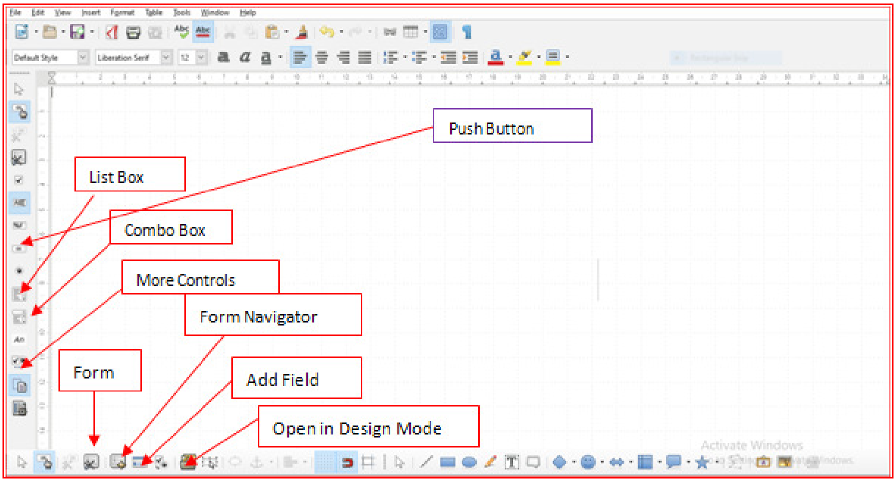
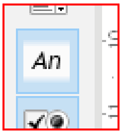



Fig 6.42 Form Creation Screen Design View

The following steps will guide you in the process of table creation using design view.

## a) Enter a Title to the Form

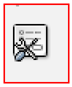
For giving a suitable title to the form - 'Bus Fee Entry Form' the procedure listed below need to be followed.




- Click on Label Field
- Now a green border appears around the control with eight handles.
- Drag and drop at the top of the form
- Right click→ 'Select Control '→label properties appear
- Label'→" Bus Fees Entry Form"
- Font→Change Font type and size (Broadway, Regular, 20)

## b) Connecting Table with Form

It should be noted that the form has no connection with the tables so far. Data entered through the form will not be added in the table unless connection between table and form is established. When connection is successfully established, field names of the table will be available in the form control properties box. To connect a table, follow the procedure described below.

i. Click on the Form Tool 

It opens Form Properties Window. (Figure 6.43)

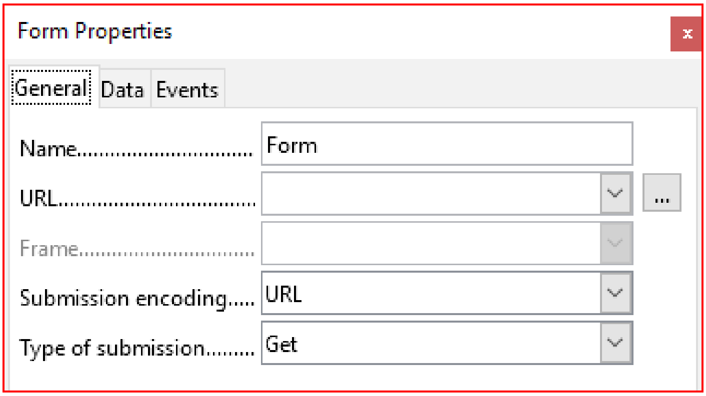



Fig 6.43 Form Properties Window

It has three Tabs: General, Data and Events.

ii. Click on Data Tab

iii. Content type: Table

iv. Content: Click in the 'more' button on the right side of the field box to get list of tables. Select the table - tblBUSFEE

**Adding fields and labels**: As we know tblBUSFEE has four fields. In order to input data in to field some text boxes are to be added to the form

So these fields are to be added to form. For this we can use different methods such as adding field labels and text boxes or using add field tool, etc. (Figure 6.44). Form creation using the handy method "Add Field" is narrated here. The "Add Field" tool can be seen in the right side of bottom tool bar.


Fig 6.44 Add Field Button

Click on Add Field tool to open add field window.

To add a field to form select and double click on field name. (Figure 6.45)

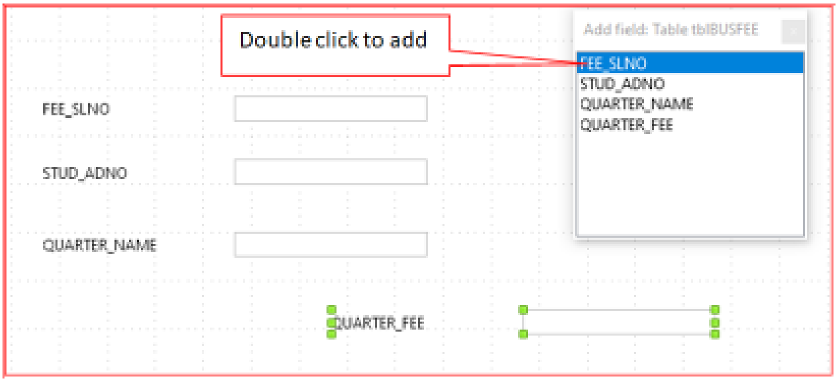



Fig 6.45 Field Insertion

If necessary we can change labels, align, resize, font type and size of all labels and fields. Press Ctrl+click to select single label or field to be changed. (Right click → Group→ Ungroup). This is an alternate method to select single label or field.

To rename follow the steps given below:

- Right click →Controls→Label→ Rename labels as :
  - o FEE_SLNO as "Payment Sl.No"
  - o STUD_ADNO as "Admission No"
  - o QUARTER_NAME as " Name of Quarter"
  - o QUARTER_FEE as "Quarter Fee"

## c) Setting Properties for Fields

We have already seen that merely adding data field to form will be of no use as it cannot find the destination field where data has to be saved. This problem can be solved by defining properties of the field. Properties are set in the following manner.

- Press Ctrl+Click to select the field we want to assign properties
- Right click →Controls→Data Tab
- Data Field→FEE_SLNO (Click inside data field to see available fields and select)
- Do the same work for the remaining fields.

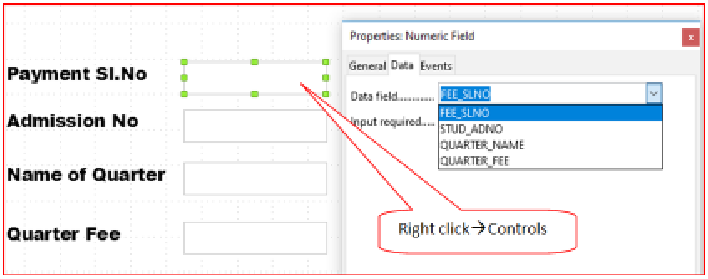



Fig 6.46 Connecting Form Field to Table Field

Alternative Method:

Another way to set properties is to use Form Navigator in the Tool bar(Figure 6.47).


Fig 6.47 Form Navigator button

Click and select Form Navigator. This will open Form Navigator window as seen below (Figure 6.48).

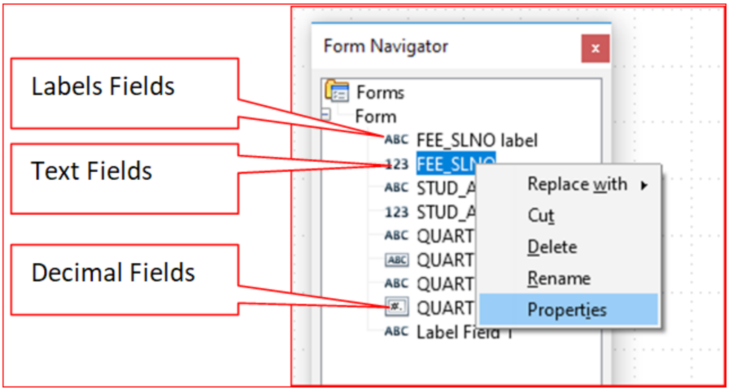


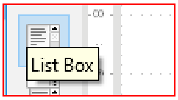

Fig 6.48 Form Navigator Window

- Each of these elements are iconised based on their type
- Right click on field name to get properties
- Click on Data Tab
- Data Field: Click inside data field to get available fields and select the one required

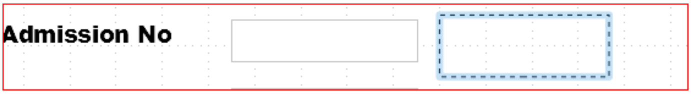
## d) Adding List Box

A list box helps to select a value from among a list of values, by limiting erroneous entries. The List Box tool can be seen in the tool bar on the left side.

Click on the list box tool. On selection, the mouse pointer changes to plus sign(+), click




and drag on the desired place to form a rectangular like area and release the mouse button.



On releasing the mouse button, a " List box Wizard" will pop up (Figure 6.49) and follow the screen instructions.

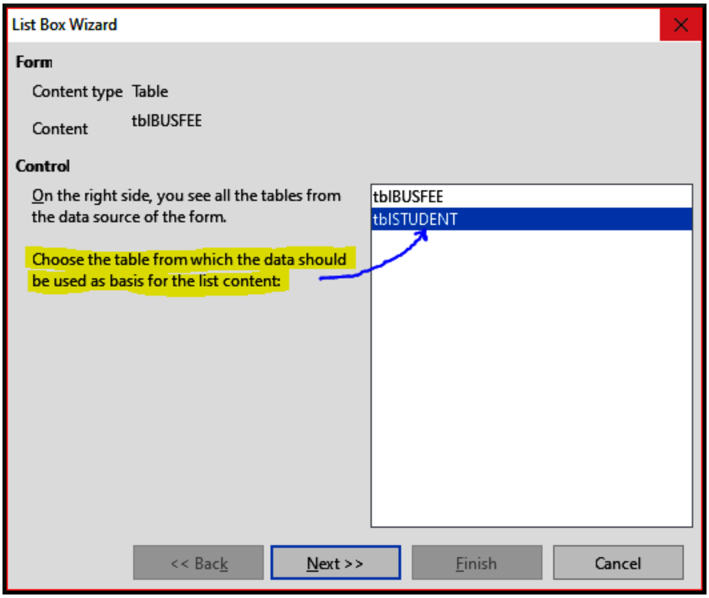



Fig 6.49 List Box Wizard

- Select the display field: The field that contains values to be displayed in the List Box. In our example field STUD_ADMNO of table tblSTUDENT must be selected. This field has admission numbers to be displayed (Figure 6.50).

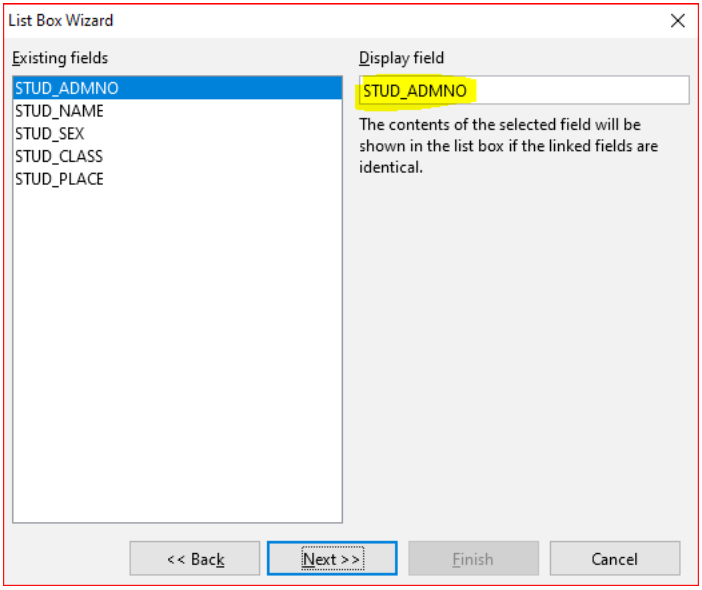



Fig 6.50 Selecting Display Field in List Box

The contents of the selected field will be visible in the List Box. Next screen of the wizard asks for field from the Value Table and field from the List Table. Field from the Value table is the field to receive or get value. Field from the List Table is the field that passes value to Value table.

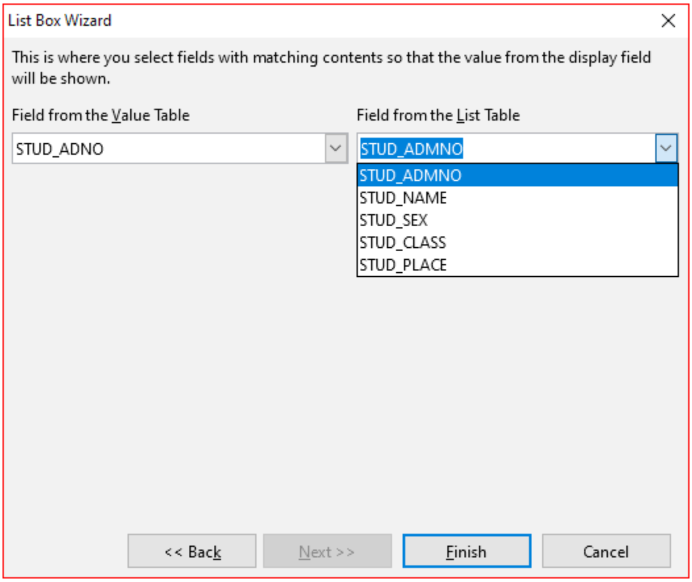



Fig 6.51 Connecting Value Table and List Table

Pressing 'Finish' button will take you to the form you have created. Now the List box will display admission number based on student records, added in the table tblSTUDENT.

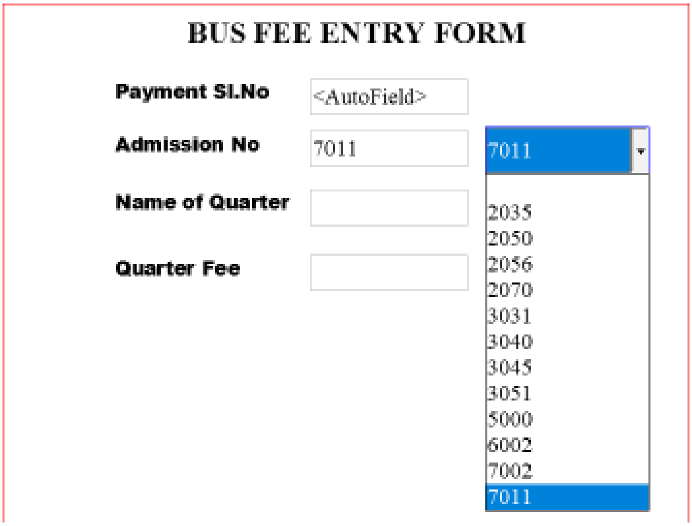



Fig 6.52 Selecting from List Box

## Creating tables for the list box

Now let us discuss about Simple List Box and its creation. When entering data it is easier to select a value from a list. Here we are trying to enter a fixed value from the list and choices are made from it while entering a particular record using forms. The user is limited to the choices given in list box and it is not possible for him to give a value of his own.

For example, if the list box holds values such as- quarter 1, quarter 2, quarter 3 and quarter 4, then the user is limited to select these four options only. He cannot input data other than what is stated in the box. The process of list box creation is explained below.

- Click on the list box tool. On selection the mouse pointer changes to plus sign(+), click and drag the mouse pointer against the "Name of Quarter" field and release the mouse button.
- A List box wizard will appear prompting to select a table from list of tables. Click cancel. (Do not add any table at this point)
- Now green border appears around the List Box with eight handles.
- Right Click→ Control→Data Tab
  - Data Field→Click and select field QUARTER_NAME
  - Input Required→Yes
  - Type of List Contents→Click and select Valuelist.
  - List Content: Click in the box and type Quarter 1 and press Shift+ Enter Key to type other values. Press Enter Key at the end.
  - General tab→List Entries→click and type four options inside. For each option press Shift+Enter key,and for the last option press Enter key only.
  - Save and close the wizard.
  - Switch the design mode off and see the changes reflected.

### Try yourself

*Create a LibreOffice Base small pro template to Create Account Groups under the following Primary Groups*

1. *Assets*
2. *Liabilities*
3. *Capital*
4. *Expenses*
5. *Revenue*

*(Hint: Current Asset group can be created under the primary Group Assets.) Create necessary table to contain the records added.*

### 6.4.4 Working with Sub Forms

A sub form is a form inserted in to a Main Form, which works together with it. Sub Forms are used to input data into tables or show data from table or queries with one- to -many relationships.

#### (a) Creating subforms to view / show data

You know that form frmBUSFEE is used to enter receipts of bus fees. While entering details of fees of students in different quarters, we may like to view the details of these students like name, class, place, etc. Sub form provides an opportunity to view such details within the Main Form. The form so inserted is linked with table tblSTUDENT which contains such details. The procedures for sub form creation are illustrated as follows; (Figure 6.53).

- Create a main form
  - o Forms→Use Wizard to create Forms
- Select table tblBUSFEE for the Main Form and add fields
  - o Table or queries→Available Fields >> ADD fields

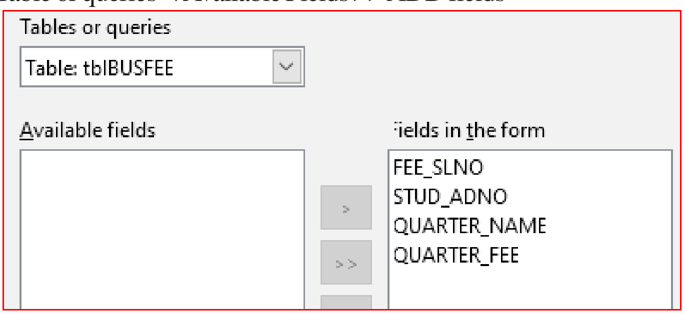
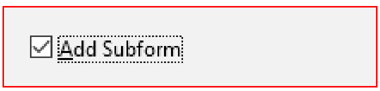



Fig 6.53 Adding Fields to The Main Form

- Put tick mark in the check box 'Add Subform'




- Decide the type of selection of fields
  - o Select sub form based on existing relation, if you wish to add fields, using wizard
  - o Select sub form based on manual selection of fields, if you wish to add fields manually.
- Add sub form field selection
  - o Select the table or queries for the subform
  - o Select available fields to be included in subform
- Available fields >> ADD fields. See the figure 6.54.

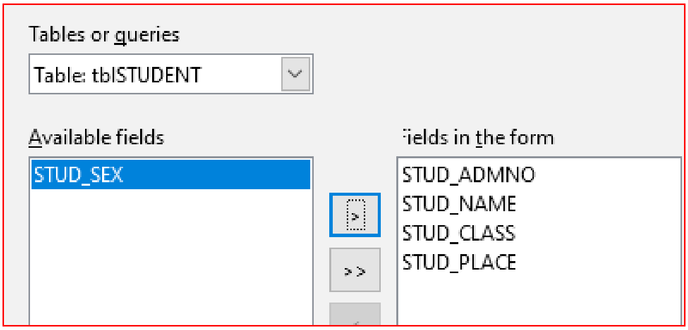



Fig 6.54 Adding fields to the Main subform

- Select joins between sub form and main form
- Connect first joined field of the sub form with first joined field of the Main Form. (Figure 6.55)

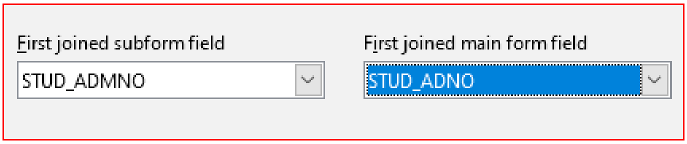



Fig 6.55 Joining fields

- Arrange controls : Select Main Form as Columnar-Left and Sub Form as Data Sheet (other controls may also be opted)
- Select the data entry mode: whether the form is to enter new data or display existing data.
- Apply style by selecting any one from the style palate : select Light Gray.
- Set Name: Give a name to the form. Type the name frmBUSFEEsub1 and save.(You may open the form in design mode ( Edit Form) and change labels and alter properties for font, size colour etc.)
- You can use record pointers to move across various records. On selection of a particular record in the main form, its associated data will be displayed in the sub form. This can be seen from the figure 6.56.

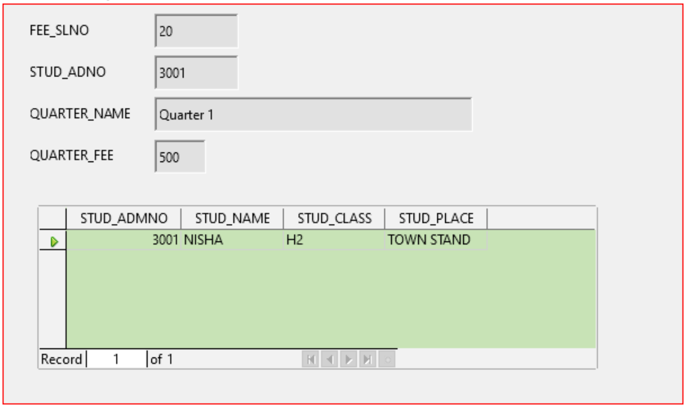



Fig 6.56 Working of a Subform to Show Data

- Similarly, if we create a form with sub form to display details of fees paid , it may look like the one given below. It may display fees details when name is given.

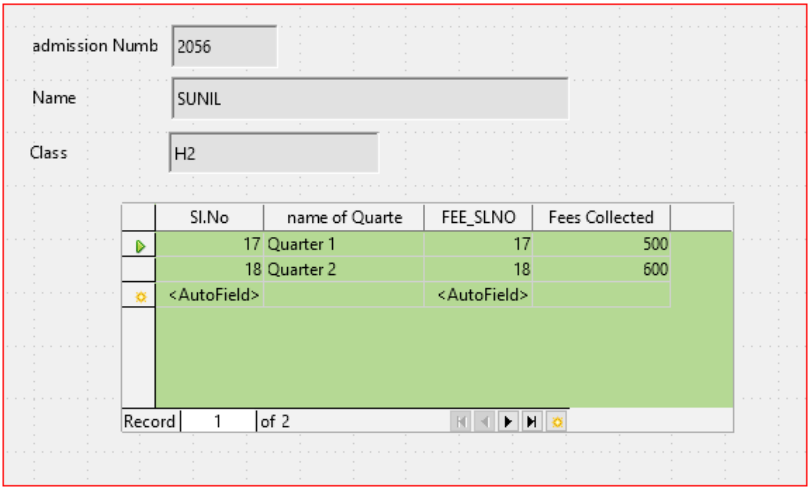



Fig 6.57 Subform to display data

## (b) Subform to Input Data

Sub form within a main form can be used to input data. Initiate the following steps to input data using a sub form.

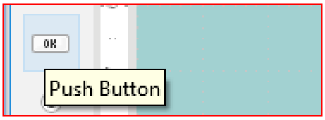
- Select 'tblSTUDENT', to set up a subform
- Put a tick (✓) mark in the check box "Add Subform", which will activate steps 3 and 4 namely 'Add Sub form fields' and 'Get Joined Fields'
- Select the table 'tblBUSFEE' to make 'field selection' and 'Get joined fields connected'
- Select both the lay out "columnar label on left, fields right" for 'arrangement of the main form' and 'arrangement of sub form'
- Select the option for new data entry
- Apply necessary styles and save the form
- Open the form in Design mode to change labels, align text boxes, etc.
- Switch off 'Design mode'

Now the form will be ready to accept data we input and all tables will be updated instantly.

## Push Buttons

In the context of LibreOffice form, a push button is a visual representation of a button that executes a task when clicked or pressed. There will be some instructions attached to these buttons. On execution of these instructions it will perform a specific task. For example, to close a file we may press on "Close" button, to save "Save" button and so on.

The Push Button option is available in the tool bar menu as seen below.




In order to select a push button, click on the push button tool , then drag and drop it on the form. Now the mouse pointer turn to a plus sign (+), which allows us to draw required number of buttons in the form (Figure 6.58).

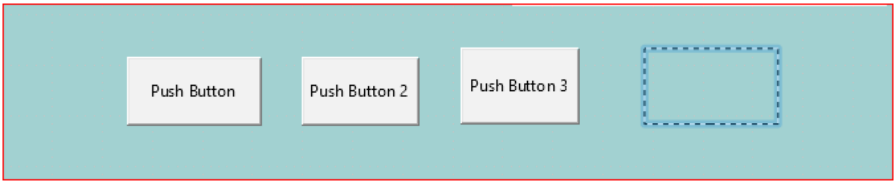



Fig 6.58 Inserting push button in a form

We can select these push buttons, move and place them on any part of the screen. Right clicking on the selection gives us next level options to align, arrange and wrap them.

You may open, control properties to change label and set properties and assign controls (Figure 6.59).

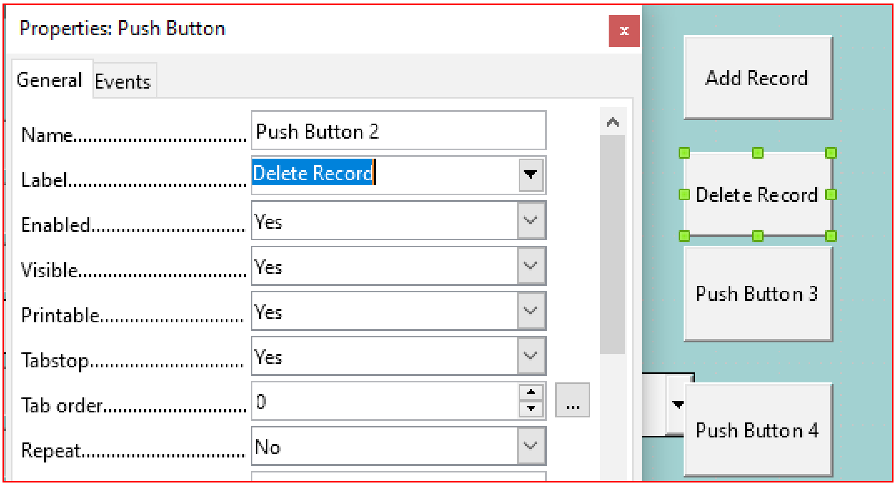



Fig 6.59 Changing Labels of Push Buttons

## Defining Action for Push Button

Once the button is placed on the form screen, we should be able to execute the task when this button is pressed. Let us see how we can make this button work.

- Select a push button
- Right click→Control→General Tab→Action (scroll down to see action in list properties box )

- Click in the 'v shaped button' against the action property to get available list of actions to perform and click to select the one we want to assign (Figure 6.60).

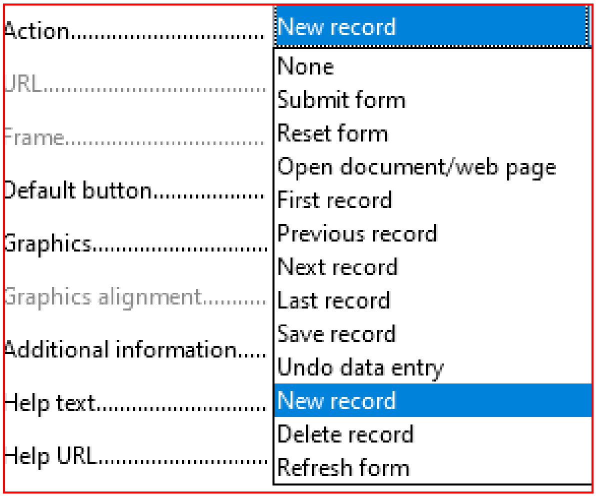



Fig 6.60 List of Executable Action

In this way, we can set or change properties for each button.

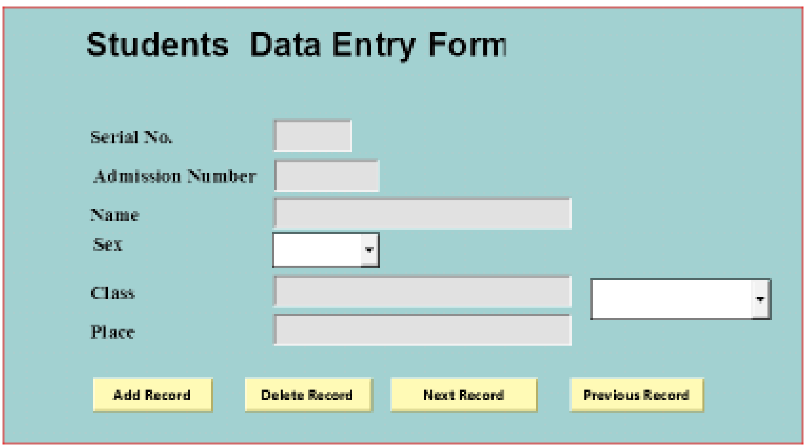



Fig 6.61 Data Entry Form with Push Button

**Check Box**

A check box is a small square box that can be placed on a form which allows user to show a choice and input that choice to a data field. It is alternatively called a selection box or a tick box. The check box tool can be picked from tools menu.

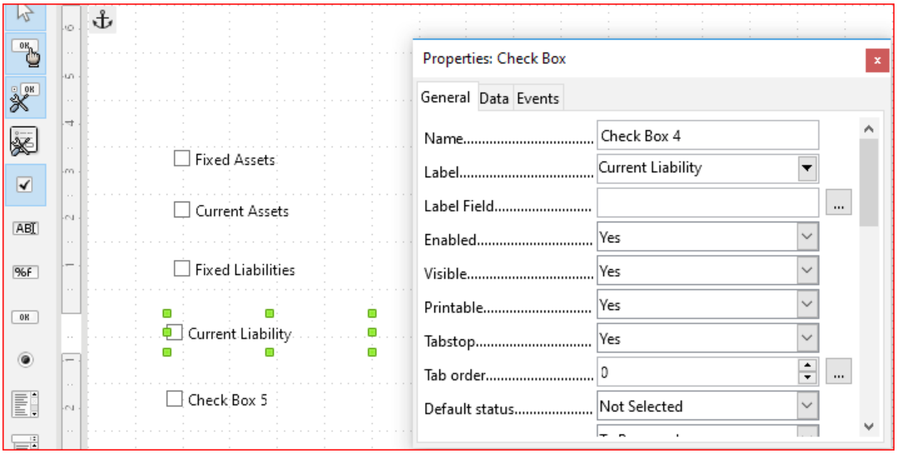



Fig 6.62 Changing Check Box Properties

Setting properties

- Right click→Control.
    - o General Tab→change general properties such as label, font, colour, height etc.
    - o Data Tab→set field properties.
- Data Field: specify the name of field which should hold the selected value.
- Input required: Yes
- Reference value (on): If a reference value is given, that value will be displayed at the time when the box is checked, and the value will be transferred to data field. If no reference value is given, the box when checked will return the value "true", and unchecked box will return "false".

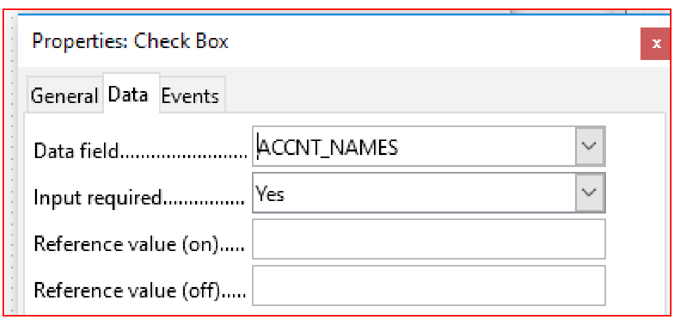



Fig 6.63 Data Properties of Check Box

## Option Buttons/ Radio Buttons

Option buttons offer the user a set of mutually exclusive options. It means that the selection of one option automatically rejects all others. The user can select only one option. The advantage of using radio button is that the selected option will be entered to the corresponding column of the table. For example radio button may be provided for selecting sex of a student (Male /Female). When several option buttons in the form are linked to the same table field, only one of the options can be selected. The properties are set in the same way we have set properties for a check box.

### Try yourself

*Create a LibreOffice Base Form template to Create Accounting Vouchers (Voucher Entry Forms)*

- *Sales Voucher*
- *Payment Voucher*
- *Purchase Voucher*
- *Receipt Voucher*

*The Voucher should contain controls to select date, debit and credit accounts (add list box to pick up account names), and text boxes to enter debit and credit amount, and a field to add narration.*

*Add Push button in a Main Form to load Voucher Entry Forms.*

Receipt Voucher

Payment Voucher

Sales Voucher

Purchase Voucher

### *Let's assess*

1. *What is a sub form?*
2. *………… is used by the front end user to enter data.*
3. *You can enter data using sub form - (Yes/No)*
4. *What is a list box?*
5. *What are the uses of push buttons?*

## 6.5 Creating queries in LibreOffice Base

A Query is a question asked or enquiry sent to a data base to bring together data from different tables, calculate results, and quickly filter any mass of data. More often query results can be a data source for forms and reports.

A database query can be either a select query or an action query. A select query is used to retrieve data while an action query is used to do some specific operations on the data, such as arithmetic operations, insertion, updating, deletion etc.

### 6.5.1 Creation of Queries Using Wizard

Queries can be created with the help of Query Wizard or in Design View. These options can be found in the Database pane on the main window of our database. The procedures for creating query using wizard are illustrated below (We can use the tables we have already created).

- Open the Query Wizard by clicking on "Use Wizard to Create query"

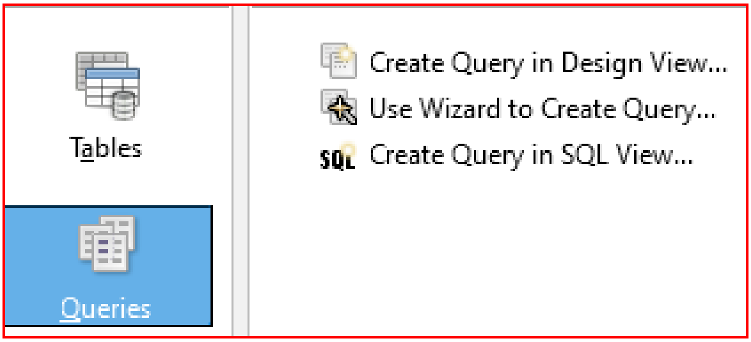



Fig 6.64 Create query options

- Select the table tblSTUDENT and add required fields.

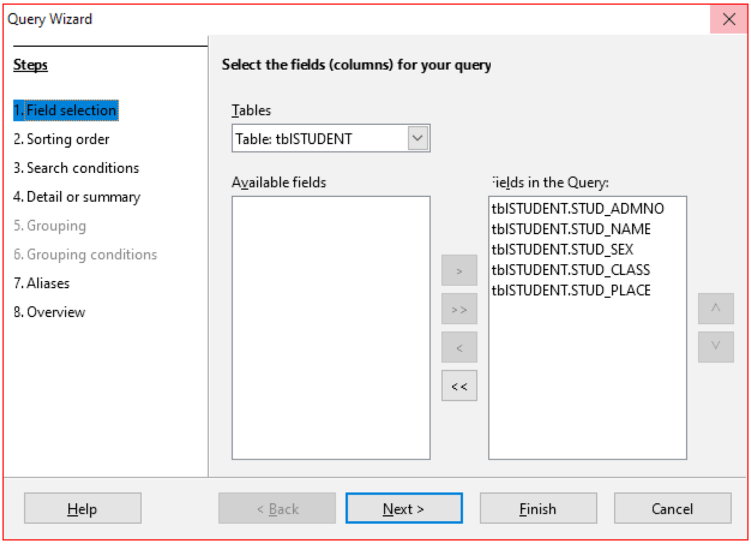



Fig 6.65 Adding Fields to Query

- Select the sorting order: Here the query sorts the data on the basis of the field priority we specify.

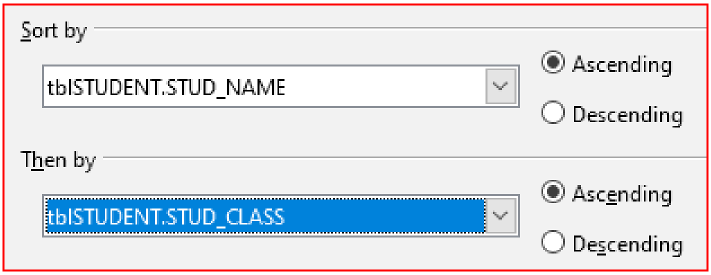



Fig 6.66 Setting Sort Priority

- Select the search conditions: This window allows you to specify a field to be searched, a search condition and a value.

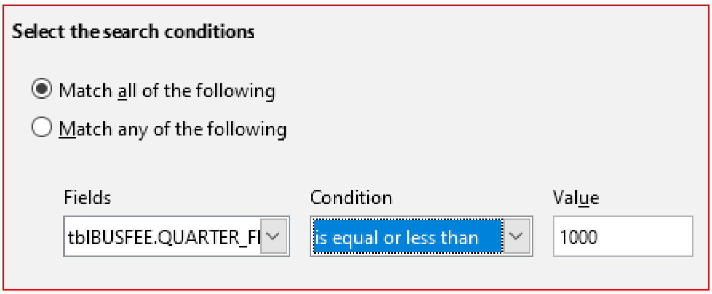



Fig 6.67 Setting Search Conditions in a Query

- Specify the type of Query.
  - o Detailed Query: Show all records of the query
  - o Summary Query. It will display results of aggregate functions we specify

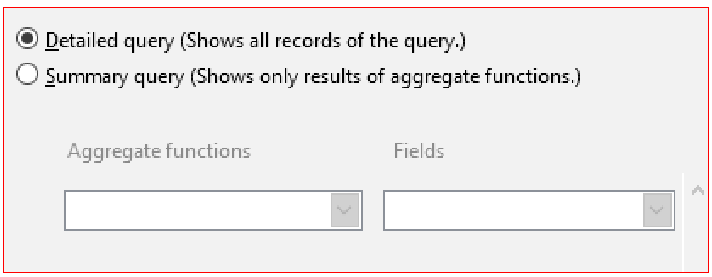



Fig 6.68 Selecting Query Type

  - o If Summary Query is opted, then we will get two more options, namely, Grouping and Grouping conditions as the 5th and 6th steps.
- Alias: If desired, alias name for each field may be given here.
- Over view: This window contains the following:
  - o Name of the Query: Give a name to save the query.
  - o It also provides an overview of steps done at this point.
  - o It also provides options to Display Query or Modify Query

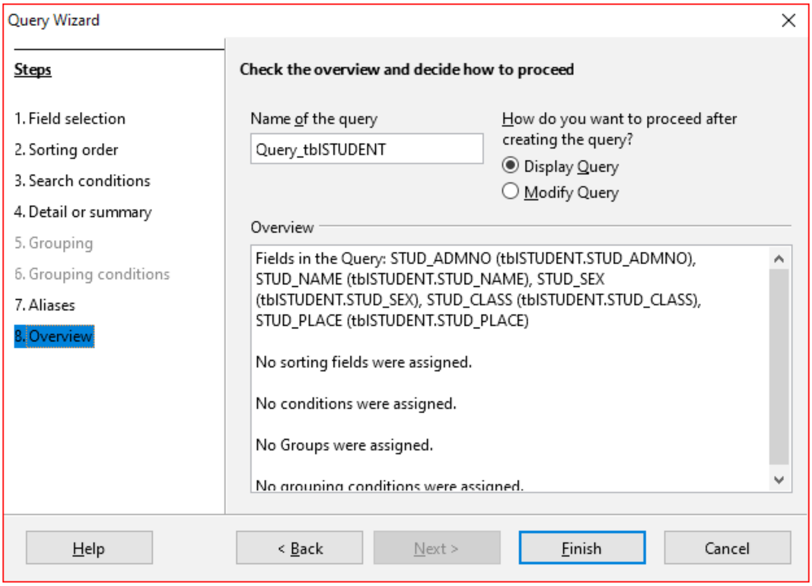



Fig 6.69 Overview of steps followed to build Query

## Running Queries

A query is run from the Edit menu by clicking run query option or by selecting 'Run Query' button from the tool bar or by pressing the F5 key.

If we opt Display query, the query will run and display the following result. (Figure 6.70).

| STUD_ADMNO | STUD_NAME | STUD_SEX | STUD_CLASS | STUD_PLACE |
|---|---|---|---|---|
| 0 | | | | |
| 2030 | JAFFER | MALE | C2 | NOORANI |
| 2035 | JAYA | FEMALE | S2 | PALAKKAD TOWN |
| 2050 | KATHU | FEMALE | C2 | KANJIKODE |
| 2056 | SUNIL | MALE | H2 | MALAMPUZHA |
| 2070 | LAKSHMI | FEMALE | S2 | TOWN STAND |
| 3001 | NISHA | FEMALE | H2 | TOWN STAND |
| 3002 | ARYA | FEMALE | C2 | TOWN STAND |
| 3031 | ANEESH | MALE | C1 | PALAKKAD |
| 3040 | SIMON | MALE | S1 | KANJIKODE |
| 3045 | MALU | FEMALE | C1 | MALAMPUZHA |
| 3051 | SHERIN | FEMALE | C1 | NOORANI |
| 4001 | SREEKALA | FEMALE | H2 | GURUVAYOOR |
| 4002 | ADITHYAN | MALE | C1 | MALAMPUZHA |
| 4003 | AVINASH | MALE | S1 | PALAKKAD |
| 4010 | ARDRA | FEMALE | K1 | VENMONY |
| 4011 | ANUPRIYA | FEMALE | K1 | VENMONY |

Fig 6.70 Display of Query Result

### 6.5.2 Creation of Query in Design View

We have already seen creation of query using wizard using a single table. Now let us see how fields of more than one table are used to build queries.

We can invoke the option "Create Queries in Design view" form the Database pane on the main window of our database. It will give you the following interface. It also contain an "Add Table or Queries box". (Figure 6.71)

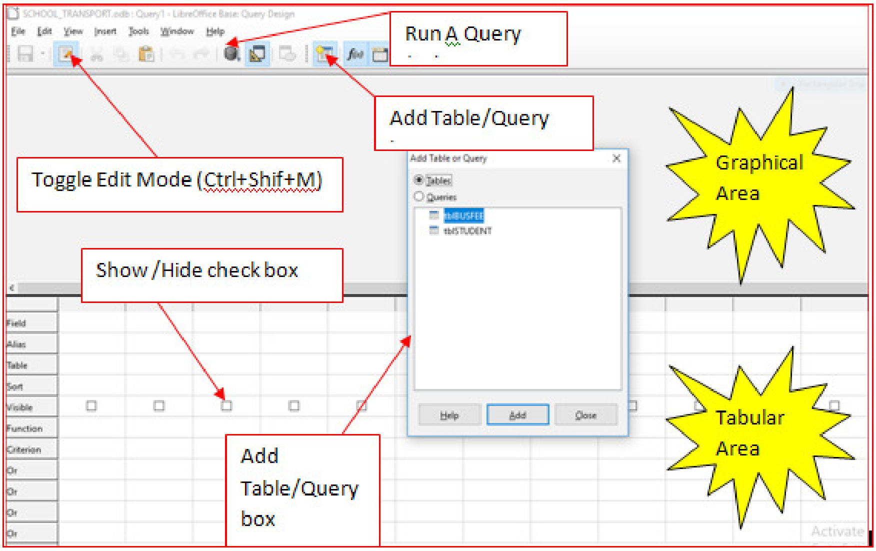



Fig 6.71 Query in Design View

- To select a table, click its name and then click the 'Add' button. Alternatively,

  Double-click the table's name. In both the cases the table is added to the graphical area of the Query. (Figure 6.72).

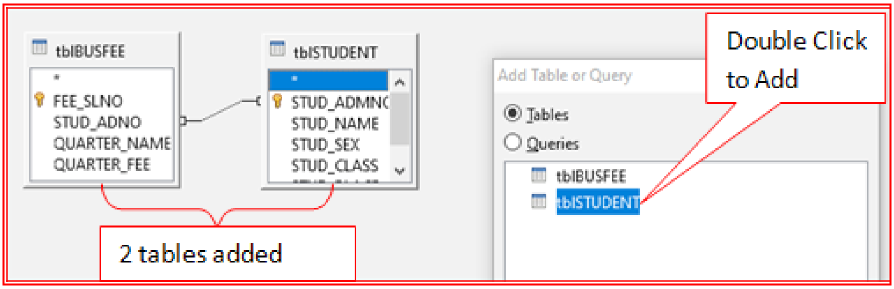



Fig 6.72 Adding multiple tables in a query

- All operations are done in the Tabular area. Hence an understanding about the important elements of tabular area is necessary. (Figure 6.73).

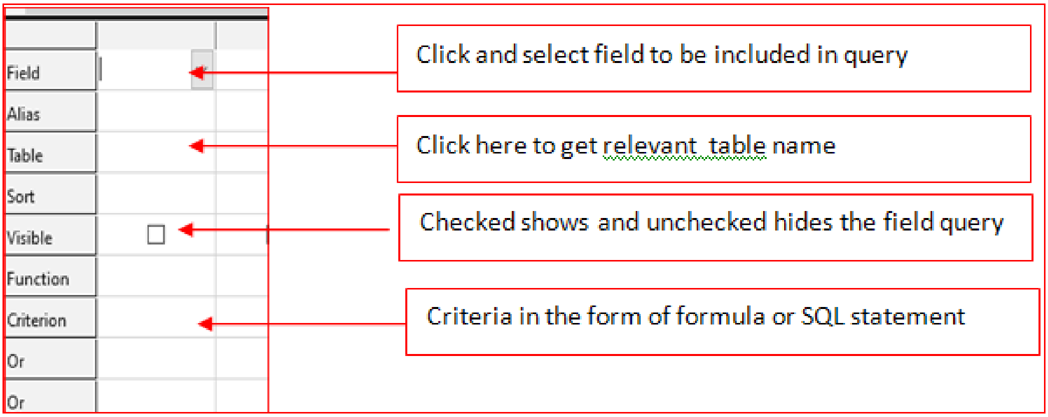



Fig 6.73 Elements of a Query

- To add a field, follow the procedures given below
  - o Assume that we want to specify fields of table tblSTUDENT
  - o Field: Click inside field box, which is populated with all fields of the above two tables. Select the first field you want to show in query.
  - o Alias: Give alias name, if necessary (optional)
  - o Table: To select table, the mouse on Table box and a mere strike of the mouse will automatically load the name of the corresponding table.
  - o Sort: If you want to sort the field, give criteria.
  - o Visible. There will be check boxes for each field, and which is used to show or hide (on or off )field values.(Box checked shows field value, while unchecked hides field values)
  - o Function: Few built in functions are available here. If necessary, select a function, say "SUM", to calculate total of the field.
  - o Criterion: In this box we may insert formula or SQL statement to do some specific operations. E.g.: "MALE" - to display all records of male students
- Save the Query giving a suitable name. Default query name is "Query 1"
- Run the Query: We may run the query from the Edit menu by clicking the Run query option, or by pressing the F5 key, or with a click on the Run Query button.

Now the query will produce the results (figure 6.74). By default, all records are listed.



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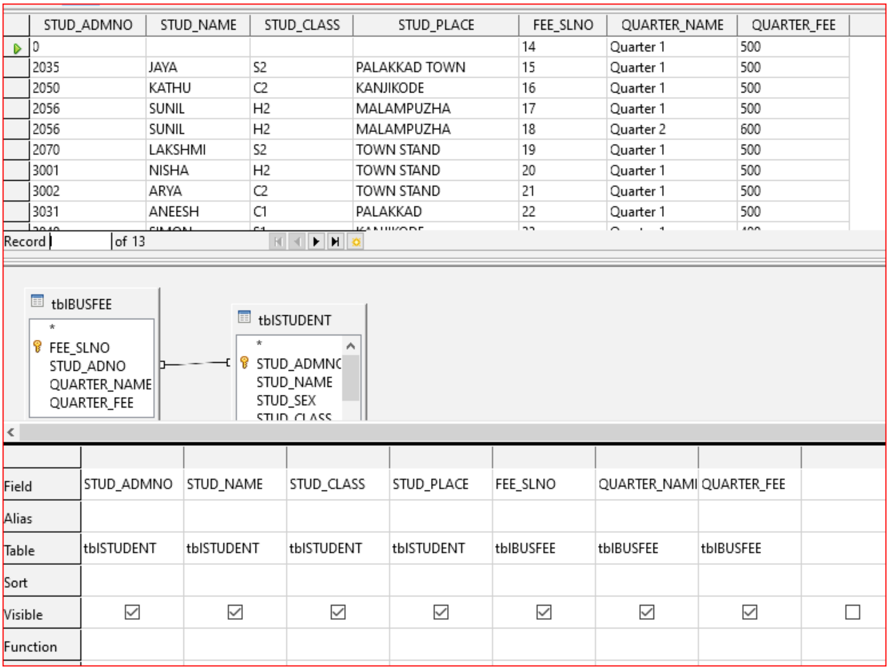


| | STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAME | QUARTER_FEE |
|---|---|---|---|---|---|---|---|
| ▶ | 0 | | | | 14 | Quarter 1 | 500 |
| | 2035 | JAYA | S2 | PALAKKAD TOWN | 15 | Quarter 1 | 500 |
| | 2050 | KATHU | C2 | KANJIKODE | 16 | Quarter 1 | 500 |
| | 2056 | SUNIL | H2 | MALAMPUZHA | 17 | Quarter 1 | 500 |
| | 2056 | SUNIL | H2 | MALAMPUZHA | 18 | Quarter 2 | 600 |
| | 2070 | LAKSHMI | S2 | TOWN STAND | 19 | Quarter 1 | 500 |
| | 3001 | NISHA | H2 | TOWN STAND | 20 | Quarter 1 | 500 |
| | 3002 | ARYA | C2 | TOWN STAND | 21 | Quarter 1 | 500 |
| | 3031 | ANEESH | C1 | PALAKKAD | 22 | Quarter 1 | 500 |

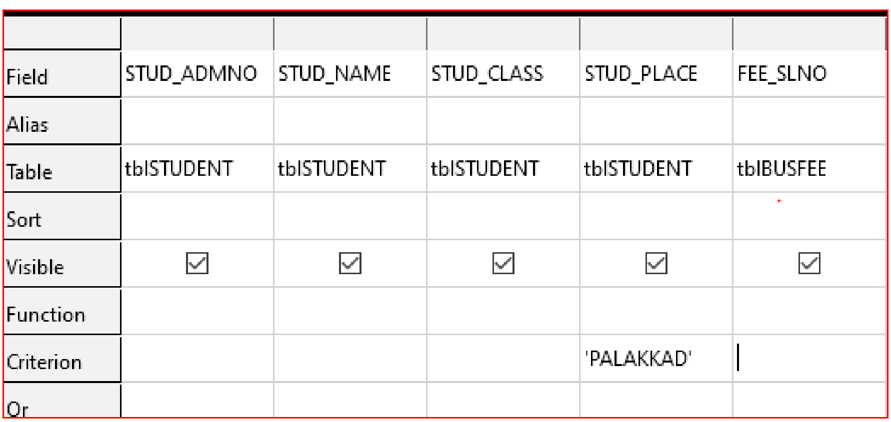
Record | of 13



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Field | STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAMI | QUARTER_FEE | |
| Alias | | | | | | | | |
| Table | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblBUSFEE | tblBUSFEE | tblBUSFEE | |
| Sort | | | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☐ |
| Function | | | | | | | | |

Fig 6.74 Result of Query Executed / Run

- Adding Criteria
  - Modifications to query can be done in Design Mode only. To open the query in design mode, right click on file name and click on "Edit".
  - To display records of all of students from a particular place
- Focus on the field "STUD_PLACE" and click inside the Criteria column corresponding to it. Now the cursor will prompt for entering criteria. Type "PALAKKAD" and hit Enter Key and run the query (Figure 6.75).



| | | | | | |
|---|---|---|---|---|---|
| Field | STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO |
| Alias | | | | | |
| Table | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblBUSFEE |
| Sort | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ |
| Function | | | | | |
| Criterion | | | | 'PALAKKAD' | |
| Or | | | | | |

Fig 6.75 Adding criteria in a Query

Result will be displayed as follows (Figure 6.76).

| STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAME | QUARTER_ |
|---|---|---|---|---|---|---|
| 3031 | ANEESH | C1 | PALAKKAD | 35 | Quarter 1 | 500 |
| 4003 | AVINASH | S1 | PALAKKAD | 43 | Quarter 1 | 500 |
| 4003 | AVINASH | S1 | PALAKKAD | 44 | Quarter 1 | 500 |
| | | | | <AutoField> | | |

Record | of 3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Field | STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAMI | QUARTER_FEE |
| Alias | | | | | | | |
| Table | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblBUSFEE | tblBUSFEE | tblBUSFEE |
| Sort | | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |
| Function | | | | | | | |
| Criterion | | | | PALAKKAD | | | |

Fig 6.76 Result of Query with Criteria Changed

o Using NOT operator in criteria.

- If we want to list all records of students except those coming the place, say PALAKKAD, then type exactly as 'NOT PALAKKAD' in the criteria box (Figure 6.77).

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Field | STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAMI | QUARTER_FEE | |
| Alias | | | | | | | | |
| Table | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblBUSFEE | tblBUSFEE | tblBUSFEE | |
| Sort | | | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☐ |
| Function | | | | | | | | |
| Criterion | | | | NOT PALAKKAD | | | | |

Fig 6.77 Query Using 'NOT' Operator

### 6.5.3 Adding Computational Field

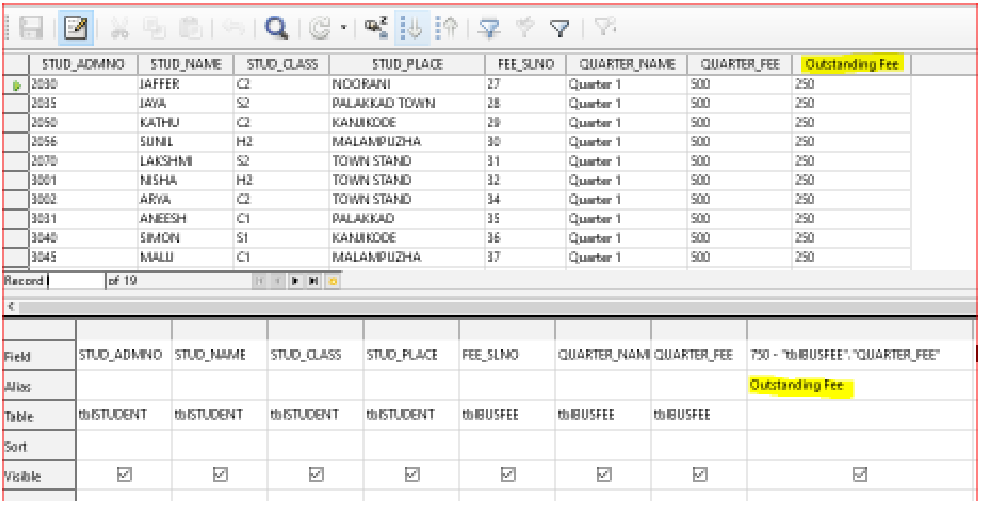
o Suppose that the Quarter 1 bus fees is ₹ 750. Students have remitted only ₹ 500 each. To compute the dues, a computational field may be inserted. Here everyone must remember two important aspects:

- Remember the table name (tblBUSFEE)

- Remember the field name (QUARTER_FEE)
- Every field is referred in SQL statement in association with table name. Thus the field name should be typed as tblBUSFEE.QUARTER_FEE. If quarter fee is ₹ 750, to find dues write statement as: 750 - tblBUSFEE.QUARTER_FEE.

  Now let us see how  it is written in Query.
- Field :Click in an empty field box


- Type : 750 - tblBUSFEE.QUARTER_FEE and hit Enter Key
- Alias: In Alias column type a column heading "Outstanding Fees" and hit enter key
- Table: Leave the table column blank. Do not make any entry here.
- Now Run the query. We can see that the balance amount is calculated as shown in a new field as "Outstanding fee"



| STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAME | QUARTER_FEE | Outstanding Fee |
|---|---|---|---|---|---|---|---|
| 2030 | JAFFER | C2 | NOORANI | 27 | Quarter 1 | 500 | 250 |
| 2035 | JAYA | S2 | PALAKKAD TOWN | 28 | Quarter 1 | 500 | 250 |
| 2050 | KATHU | C2 | KANJIKODE | 29 | Quarter 1 | 500 | 250 |
| 2056 | SUNIL | H2 | MALAMPUZHA | 30 | Quarter 1 | 500 | 250 |
| 2070 | LAKSHMI | S2 | TOWN STAND | 31 | Quarter 1 | 500 | 250 |
| 3001 | NISHA | H2 | TOWN STAND | 32 | Quarter 1 | 500 | 250 |
| 3002 | ARYA | C2 | TOWN STAND | 34 | Quarter 1 | 500 | 250 |
| 3031 | ANEESH | C1 | PALAKKAD | 35 | Quarter 1 | 500 | 250 |
| 3040 | SIMON | S1 | KANJIKODE | 36 | Quarter 1 | 500 | 250 |
| 3045 | MALU | C1 | MALAMPUZHA | 37 | Quarter 1 | 500 | 250 |

Record | of 19

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Field | STUD_ADMNO | STUD_NAME | STUD_CLASS | STUD_PLACE | FEE_SLNO | QUARTER_NAMI | QUARTER_FEE | 750 - "tblBUSFEE"."QUARTER_FEE" |
| Alias | | | | | | | | Outstanding Fee |
| Table | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblSTUDENT | tblBUSFEE | tblBUSFEE | tblBUSFEE | |
| Sort | | | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

Fig 6.78 Result of Computational Field

To add amount fields, you may use the following syntax

Table1.feild1+table1.field2+table1.field3

To compute 10% of a field :

Table1.field*10/100

**Try yourself**

*Collect details of Books and periodicals in your school library and create necessary table to record their stock. Create form to monitor receipts and issue of books and periodicals. Necessary queries may be created to get subject-wise list of books, class-wise issue of books, list of pending books unreturned issues, etc.*

## 6.6 Creating reports in LibreOffice Base

The ultimate objective of Data Base Management System is to provide right information at the right time. This purpose is fulfilled at the end through reports. Reports are generated from the database tables or queries. LibreOffice provides lot of tools that help you to quickly build attractive, easy-to-read reports that present the data in a way that best suits the needs of its users.

Reports can be static or dynamic.

### 6.6.1 Static Reports

Static reports are meant to present information that is not likely to change over time. The system retrieves data from database at the time the report was created, and there after the information in a static report does not get updated.

### 6.6.2 Dynamic Reports

Dynamic Reports are meant to present information that changes over time. Dynamic reports always get updated to show the latest changes in data. Dynamic reports show the latest data and the system updates the data in a dynamic report when the report is displayed, usually in a Web browser.

It is to be understood that reports can be created using both tables and queries. You may include all fields or just selected fields according to your needs. If the data is spread over across different tables, then it is advisable to create queries based on selected fields of different tables. Later we can use that query for creating reports. From this we can say that a lot of preliminary work is involved to create a report in its designing phase. The designing of reports may go through the following stages.

### 6.6.3 Steps in designing a Report

i) Assess the requirements expected in the reports.

ii) Decide overall layout.

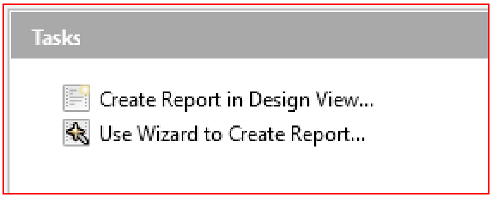
iii) Determine needed tables and columns to be included.

iv) Compose or build query.

v) Build the report.

### 6.6.4 Creating Reports

To create reports, click on the 'Reports icon' in the Database pane.It will show two sub options (See figure given below) . Here the report creation is confined to creating report using wizard only.




**Use Wizard to create Report**: In this a wizard will direct you to start and finish report creation in self explanatory and user friendly manner.

When we click on 'Use Wizard to Create Reports', a screen similar to the following will appear (Figure 6.79).

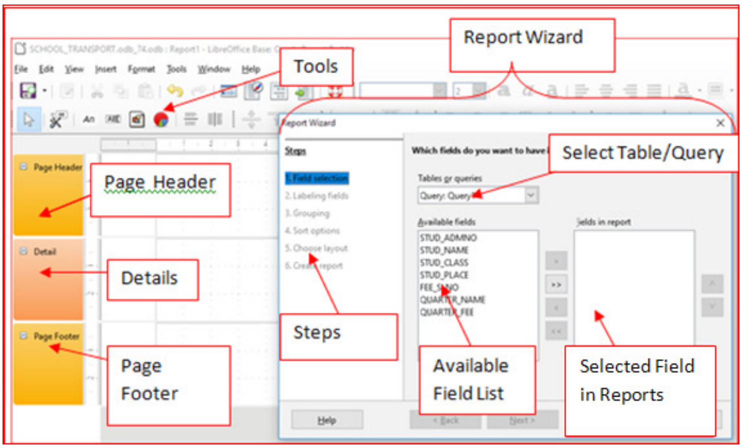



Fig 6.79 Report Wizard Screen

Every report will have its Page Header, Details or Report Body and Page Footer.

- Page Header: It appears at the top of the first page of the report. It may contain report title, logo and current date.
- Header: It is seen just below Page header: Its main object is to provide field heading or content heading.
- Details: It is the place where actual data or field contents are shown.
- Page Footer: It is seen at bottom of each page of the report, where current date, page number, etc, are given.

Report Wizard: It provides on screen direction to build reports in a professional manner.

Report wizard lets you walk through six steps starting with field selection. These are explained below:

## 1) Field Selection

In field selection, the report wizard provides a list of tables or queries to select from the list with its associated fields. Using add button, we can add all fields or just selected fields which we wish to show in reports (See figure 6.80).

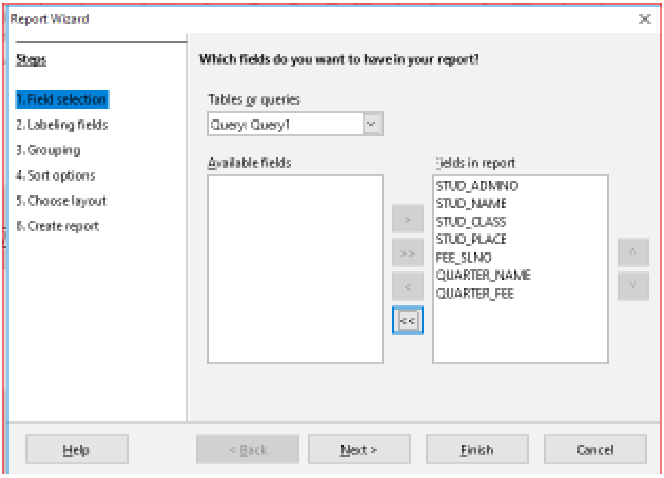



Fig 6.80 Adding Fields to Reports

## 2) Labelling Fields

In this screen we can decide as to how we want to label the fields (Figure 6.81). Wizard automatically takes all field names from database and assigns them as column headings, which may not be in a quite understandable form. So we may change field labels to make it more meaningful and attractive.

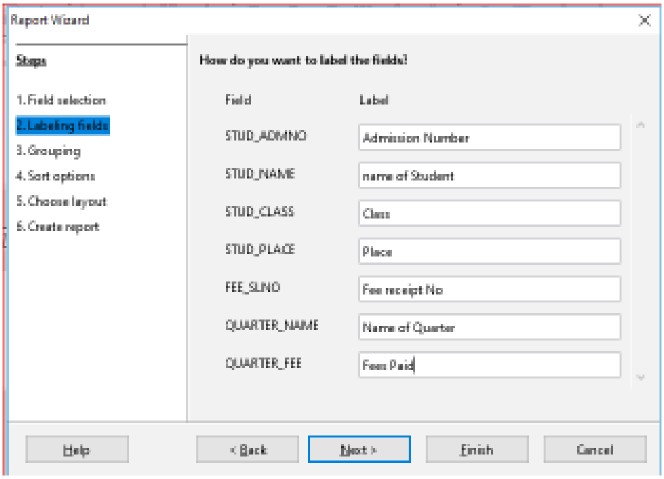



Fig 6.81 Labelling Fields

It is to be noted that the labels we add above will appear as column or field headings in a report. So care must be taken to give very short labels.

### 3) Grouping

In this step, the wizard asks us to select and assign a field or fields for grouping, if any required. If we select a field, then the entire information in the report will be grouped on the basis of field name we have provided. For example, if we select "QUARTER_FEE " for grouping , then the report will be built on the basis of Fees, say "list of those who paid 500", " list of those who paid 750" "list of those who paid 900" and so and so forth. If we select "STUD_CLASS" , then information will be grouped on the basis of students class. Assume that we select "STUD_CLASS" as the field for grouping in our example as shown in figure 6.82. See also figure 6.84.

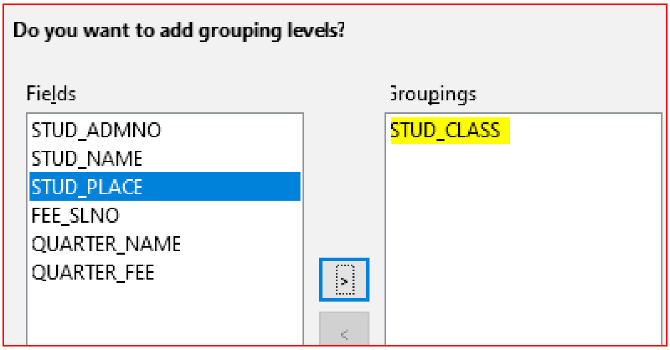



Fig 6.82 Grouping on the basis of selected Fields

### 4) Sorting Options

In this step, the wizard lets us to assign field or fields on the basis of which we wish to sort the data in reports. For example, if we select "STUD_NAME", then the records will be listed in the alphabetical order of students. See figure 6.84.

### 5) Choosing Layout

Choosing layout, determines how we want our reports to look like. The available templates include the following:

- o columnar.
- o columnar-single column.
- o columnar-two column.
- o columnar-three column.
- o in blocks-labels above.
- o in blocks labels -right.

At this stage we can also select orientation Landscape or Portrait.

### 6) Create Report

It is the last stage in building a report. Here the considerations are;

a. Title of the Report: You have to give a suitable name for the report, say "List of Bus Fees Collected"

b. Type of Report : You may select Static or Dynamic type for the report. If you choose Static, you won't be able to modify the report. If you select Dynamic option, then Modify or Create report option is available. See figure 6.83.

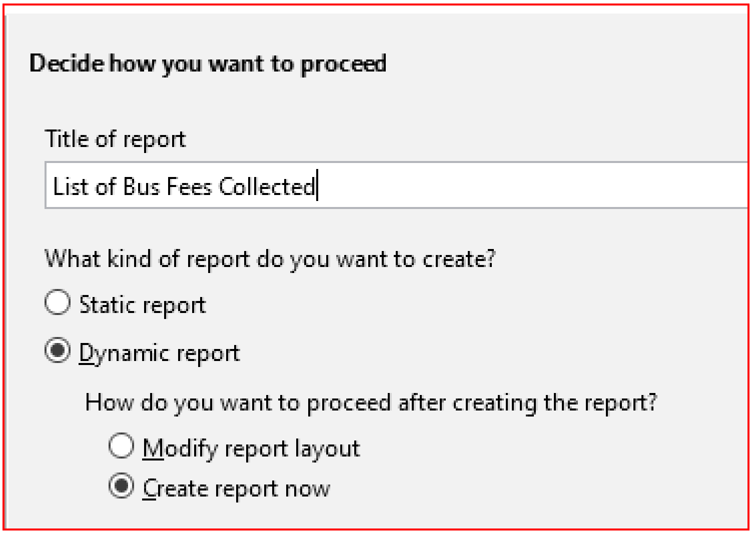



Fig 6.83 Type of Report

Upon finishing, the report will be generated and saved (Figure 6.84).

**Class** C1

| Admission Number | name of Student | Place | Fee receipt No | Name of Quarter | Fees Paid |
|---|---|---|---|---|---|
| 4002 | ADITHYAN | MALAMPUZHA | 42 | Quarter 1 | 500 |
| 4002 | ADITHYAN | MALAMPUZHA | 41 | Quarter 1 | 500 |
| 3031 | ANEESH | PALAKKAD | 35 | Quarter 1 | 500 |
| 3045 | MALU | MALAMPUZHA | 37 | Quarter 1 | 500 |
| 3051 | SHERIN | NOORANI | 39 | Quarter 1 | 500 |
| 3051 | SHERIN | NOORANI | 38 | Quarter 1 | 500 |

**Class** C2

| Admission Number | name of Student | Place | Fee receipt No | Name of Quarter | Fees Paid |
|---|---|---|---|---|---|
| 3002 | ARYA | TOWN STAND | 34 | Quarter 1 | 500 |
| 2030 | JAFFER | NOORANI | 27 | Quarter 1 | 500 |
| 2050 | KATHU | KANJIKODE | 29 | Quarter 1 | 500 |

**Class** H2

| Admission Number | name of Student | Place | Fee receipt No | Name of Quarter | Fees Paid |
|---|---|---|---|---|---|
| 3001 | NISHA | TOWN STAND | 32 | Quarter 1 | 500 |
| 4001 | SREEKALA | GURUVAYOOR | 40 | Quarter 1 | 500 |

Fig 6.84 Generated Report

## Try yourself

*Create a LibreOffice Base Project to automate School Admission Register. It should contain the following.*

- *Table/Tables to store data*
- *Data Entry Form*
- *Necessary Queries to interact with the database*
- *Useful reports*

The automation of School Bus management system has been discussed so far. What if someone asks us about the net effect of running the school bus?

- How can we ascertain the surplus or deficit of running the school bus?

We all know that since this is a service activity, we need to prepare a Receipts and Payments account for ascertaining the surplus or deficit. Let us now discuss how receipts and payments can be prepared using this DBMS tool.

Receipts and Payments Account shows all cash receipts and payments of a Not for Profit making Institution. The debit side shows all receipts and credit side shows all payments. For catering the above, the following tables needs to be created.

i) A table for storing details of transactions relating to receipts and another for payments. It may have the following structure (Figure 6.85).

| Field Name | Field Type |
|---|---|
| TRANSNO | Integer [ INTEGER ] |
| TRANS_DATE | Date [ DATE ] |
| DR_ACC_NAME | Text [ VARCHAR ] |
| DR_ACC_AMT | Decimal [ DECIMAL ] |
| CR_ACC_NAME | Text [ VARCHAR ] |
| CR_ACC_AMT | Decimal [ DECIMAL ] |
| VCHR_TYPE | Text [ VARCHAR ] |

Fig 6.85 Table 1 with Data Type

This table may be saved with the name "tblTransactionMaster"

ii) Another table containing name of various debit and credit ledger accounts is also designed (Figure 6.86).

| Field Name | Field Type |
|---|---|
| ACCNT_CODE | Integer [ INTEGER ] |
| ACCNTCAT | Text [ VARCHAR ] |
| ACCNT_NAMES | Text [ VARCHAR ] |
| ACCNT_TYPE | Text [ VARCHAR ] |

Fig 6.86 Table 2 with Data Type

This table may be saved with the name "TBLADD_ACCOUNTS"

iii) After creation of the above mentioned tables, a form to suit the requirements may be designed as shown in figure 6.87.

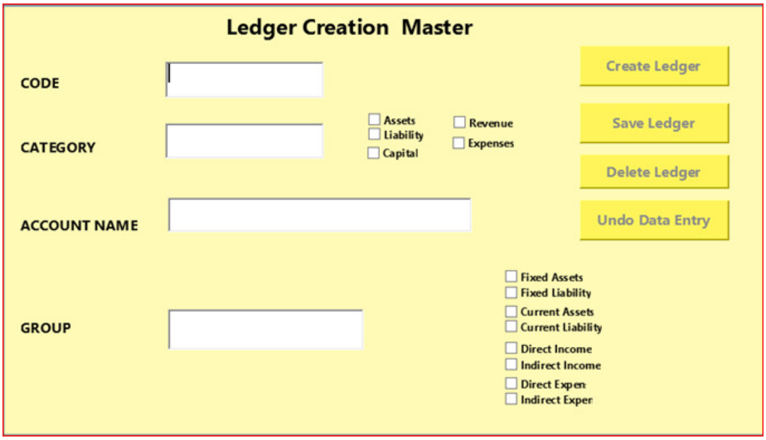



Fig 6.87 Ledger Creation Screen

The various controls in the Accounts Master Form may be set as seen below:

| Controls | Label | Data Field(Controls) |
|---|---|---|
| LABEL | Ledger Creation Master | |
| LABEL1 | CODE | |
| TEXT BOX1 | | ACCNT_CODE |
| LABEL2 | CATEGORY | |
| TEXTBOX2 | | ACCNTCAT |
| Check Box | Assets | ACCNTCAT |
| Check Box1 | Liability | ACCNTCAT |
| Check Box2 | Capital | ACCNTCAT |
| Check Box3 | Revenue | ACCNTCAT |
| Check Box4 | Expenses | ACCNTCAT |
| LABEL3 | ACCOUNT NAME | |
| TEXTBOX 3 | | ACCNT_NAMES |
| LABEL4 | GROUP | |
| Check Box5 | Fixed Assets | ACCNT_TYPE |
| Check Box6 | Fixed Liability | ACCNT_TYPE |
| Check Box7 | Current Assets | ACCNT_TYPE |
| Check Box8 | Current Liability | ACCNT_TYPE |
| Check Box9 | Direct Income | ACCNT_TYPE |
| Check Box10 | Indirect Income | ACCNT_TYPE |
| Check Box | Direct Expenses | ACCNT_TYPE |
| Check Box | Indirect Expenses | ACCNT_TYPE |
| Push Button1 | Create Ledger | Action-New Record |
| Push Button2 | Save Ledger | Action-Save Record |
| Push Button3 | Delete Ledger | Action-Delete Record |
| Push Button4 | Undo Data Entry | Action-Undo Data Entry |

The form may be saved with the name "frmCreateLedger". When we run the form for ledger creation, the following screen will appear (Figure 6.88).

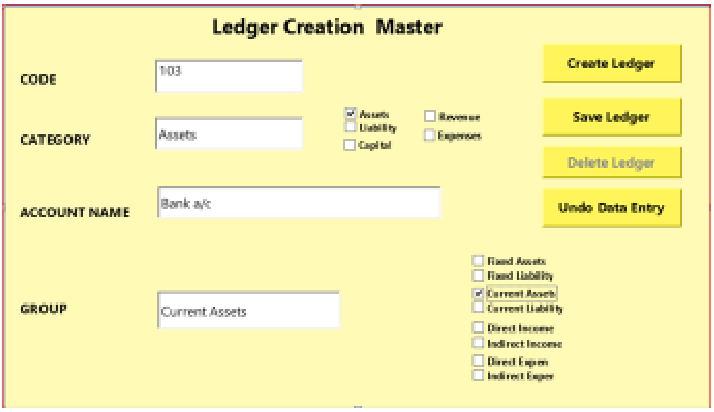



Fig 6.88 Running Ledger Creation Form

Create as many records as you want. The ledgers created will be added to the table "TBLADD_ACCOUNTS" (Figure 6.89).

| | ACCNT_CODE | ACCNTCAT | ACCNT_NAMES | ACCNT_TYPE |
|---|---|---|---|---|
| ▷ | 103 | Assets | Bank a/c | Current Assets |
| | 402 | Revenue | Bus fees a/c | Indirect Income |
| | 201 | Capital | Capital a/c | Fixed Liability |
| | 401 | Assets | Cash a/c | Current Assets |
| | 400 | Expenses | Purchase a/c | Direct Expense |
| | 502 | Expenses | Rent a/c | Indirect Expense |
| | 501 | Expenses | Salary a/c | Indirect Expense |
| | 401 | Revenue | Sales a/c | Direct Income |
| | 502 | Expenses | Wages a/c | Direct Expense |
| ☼ | | | | |

Fig 6.89 Display Record in Table

iv) Create a Voucher Entry Form for entering transactions (Figure 6.90).

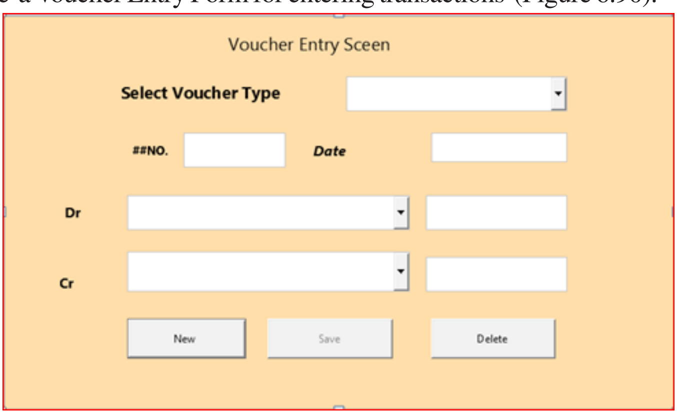



Fig 6.90 Voucher entry screen

The various controls relating to the above form may be set as follows:

| Controls | Label | Data Field(Controls) |
|---|---|---|
| LABEL | Voucher Entry Screen | |
| LABEL1 | Select Voucher Type | |
| COMBO BOX1 | | VCHR_TYPE |
| LABEL2 | ##NO | TRANSNO |
| LABEL3 | Date | TRANS_DATE |
| LABEL4 | Dr | |
| LEBEL5 | Cr | |
| COMBO BOX2<br>TEXTBOX1 | | DR_ACC_NAME<br>DR_ACC_AMT |
| COMBOBOX3 | | CR_ACC_NAME |
| TEXTBOX2 | | CR_ACC_AMT |
| TEXTBOX 3 | | ACCNT_NAMES |
| Push Button1 | New | Action-New Record |
| Push Button2 | Save | Action-Save Record |
| Push Button3 | Delete | Action -Delete Record |

This form may be saved with the name "frmTransactionMaster". When we open the form, it will look like as follows (Figure 6.91).

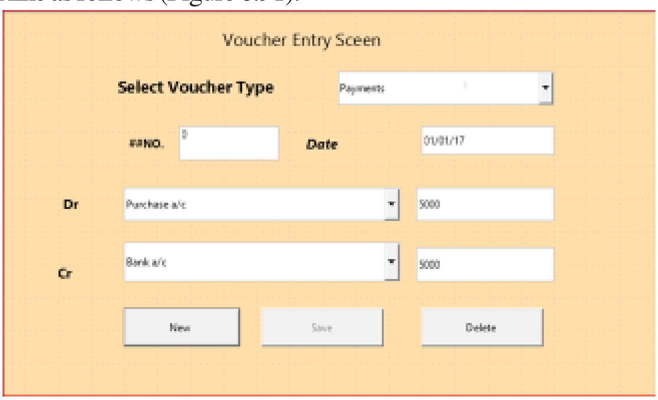



Fig 6.91 Running Voucher Entry Form

Now transactions may be entered through this voucher. After entering few transactions, the table may contain the details of following transitions (Figure 6.92).

| TRANSNO | TRANS_DATE | DR_ACC_NAME | DR_ACC_AMT | CR_ACC_NAME | CR_ACC_AMT | VCHR_TYPE |
|---|---|---|---|---|---|---|
| 7 | 01/01/17 | Cash a/c | 50000 | Capital a/c | 50000 | Receipts |
| 8 | 01/01/17 | Wages a/c | 3000 | Cash a/c | 3000 | Payments |
| 9 | 02/01/17 | Bank a/c | 20000 | Cash a/c | 20000 | Contra |
| 10 | 03/01/17 | Purchase a/c | 10000 | Cash a/c | 10000 | Payments |
| 11 | 05/01/17 | Cash a/c | 25000 | Sales a/c | 25000 | Receipts |
| 12 | 06/01/17 | Salary a/c | 5500 | Cash a/c | 5500 | Payments |
| <AutoField> | | | | | | |

Fig 6.92 Table Showing Debit Credit Transaction

From this table we can create a query to get a list of total cash payments and cash receipts.

1) Payments Query (Figure 6.93).

Create Query→Add Table→tblTransactionMaster.

| | | | | | | |
|---|---|---|---|---|---|---|
| Field | TRANSNO | TRANS_DATE | DR_ACC_NAME | DR_ACC_AMT | VCHR_TYPE | |
| Alias | | | | | | |
| Table | tblTransactionM | tblTransactionM | tblTransactionM | tblTransactionM | tblTransactionM | |
| Sort | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☐ | ☐ |
| Function | | | | | | |
| Criterion | | | | | 'Payments' | |
| Or | | | | | | |

Fig 6.93 Payment query

Give the Voucher type criteria as "Payments"

The output will be shown as follows (Figure 6.94).

| TRANSNO | TRANS_DATE | DR_ACC_NAME | DR_ACC_AMT |
|---|---|---|---|
| 8 | 01/01/17 | Wages a/c | 3000 |
| 10 | 03/01/17 | Purchase a/c | 10000 |
| 12 | 06/01/17 | Salary a/c | 5500 |
| <AutoField> | | | |

Fig 6.94 Payment query output

The report based on this query will be shown as follows (Figure 6.95).

| Trans.No | Date | Payments | Amount |
|---|---|---|---|
| 8 | 01/01/17 | Wages a/c | 3000 |
| 10 | 03/01/17 | Purchase a/c | 10000 |
| 12 | 06/01/17 | Salary a/c | 5500 |
| | | **Total** | **18500** |

Fig 6.95 Report based on payment query

To get Total Receipts, create Receipt Query. See figure 6.96.

Create Query→Add Table→tblTransactionMaster.

| | | | | | |
|---|---|---|---|---|---|
| Field | TRANSNO | TRANS_DATE | CR_ACC_NAME | CR_ACC_AMT | VCHR_TYPE |
| Alias | | | | | |
| Table | tblTransactionM | tblTransactionM | tblTransactionM | tblTransactionM | tblTransactionM |
| Sort | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☐ |
| Function | | | | | |
| Criterion | | | | | 'Receipts' |

Fig 6.96 Receipt Query

The output of the query will be shown as follows (Figure 6.97).

| | TRANSNO | TRANS_DATE | CR_ACC_NAME | CR_ACC_AMT |
|---|---|---|---|---|
| | 7 | 01/01/17 | Capital a/c | 50000 |
| | 11 | 05/01/17 | Sales a/c | 25000 |
| | 18 | 31/01/17 | Bus Fees a/c | 6300 |
| | <AutoField> | | | |

Fig 6.97 Output of Receipt Query

The Report may look like as follows (Figure 6.98).

| Trans.No | Date | Receipts | Amount |
|---|---|---|---|
| 7 | 01/01/17 | Capital a/c | 50000 |
| 11 | 01/05/17 | Sales a/c | 25000 |
| 18 | 01/31/17 | Bus Fees a/c | 6300 |
| | | **Total** | **81300** |

Fig 6.98 Report Based on Receipt Query

Similarly the payment report can also be made.

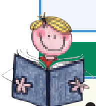
## *Let's assess*

1. *.......... is an enquiry sent to a database to manipulate data*
2. *Queries can be .......... query and .......... query.*
3. *A query is run from the .......... Menu.*
4. *.......... Reports are meant to present information that is not likely to change.*
5. *.......... reports are meant to present information that change over time.*

## Summary

- Database: A database is an organised collection of data. Data is always organised in data table consisting of rows and columns in relational model. It is indexed in such a way that the relevant information can be quickly and easily accessed, managed and updated.
- DBMS : DBMS is a software application that facilitates interaction with end users, other applications, and to the database itself to capture and analyze data. LibreOffice Base, SQL Server, Oracle, MS Access, etc. are some of the popular DBMS softwares.
- Objects of LibreOffice Base: The objects of base consist of tables, forms, queries and reports.
- In LIbreOffice Base, data is organised in tables. A table is a data structure that organises information in rows (for records) and columns (fields or attributes). They are used to store and display information in a structured format. Tables can be created using Wizard option or by using design view.
- Steps in table creation: Select design view, enter the field name, select data type, give description if necessary and define field properties. Enter table name to save by assigning primary key.
- Relationship allows database to split and store data in different tables and provides linkage to different data items.
- Normalisation is the process of removing data redundancy
- Primary Key: The field that uniquely identifies each record is called a 'Primary Key'.
- Foriegn Key: Foriegn keys are the columns of a table that points to the primary key of another table. They act as a cross reference between tables.
- Forms are used to input data in to tables. A Form is a front end for data entry and editing. Forms can be simple forms as well as complex forms. Forms can be created using Wizard or in design view.
- Steps in form creation: Select create form using wizard, various sequence of steps like Field selection, arrange controls, set data entry, apply styles and defining name for form must be followed in a sequential order.
- Create Form in Design View: Under this method, we have to add labels and fields by ourselves. Similarly connection between form, tables, fields, etc. are to be set carefully using Controls.
- Sub forms: A sub form is a form used to show data in another table or query while standing in a primary form or main form.

- Push buttons: push button is a visual representation of a button that executes a task when clicked or pressed. There will be some instructions attached to these buttons.
- Check Box: A check box is a small square box that can be placed on a form which allows user to show a choice and input that choice to a data field. It is alternatively called a selection box or a tick box.
- Option Buttons/ Radio Buttons: Option buttons offer the user a set of mutually exclusive options. It means that the selection of one option automatically rejects all others.
- A Query is a question asked or enquiry sent to a data base to extract data based on certain criteria. They can bring together data from different tables, calculate results, and quickly filter any mass of data.
- Queries can be created with the help of Query Wizard or in Design View. Open the Query Wizard by clicking on "Use Wizard to Create query.
- Creation of Query in Design View: The option "Create Queries in Design view "can be invoked form the Database pane on the main window of database It provides "Add Table or Queries box", using which we can add required fields to the query.
- Creating reports in LibreOffice Base : Reports can be static or dynamic. Static reports are meant to present information that is not likely to change over time. Dynamic Reports are meant to present information that changes over time.
- Steps in designing a report:
  i) Assess the requirements expected in the reports.
  ii) Decide overall layout.
  iii) Determine needed tables and columns to be included.
  iv) Compose or build query.
  v) Build the report.



## I can

- define the requirements that are expected from database applications
- explain how to identify data to be stored in tables and develop a suitable frame work
- state different ways to structure database as per the requirement
- design and create Libre Office Base components such as tables, forms, queries, and reports
- make use of LibreOffice Base for developing simple data base applications for capturing, storing and retrieving data

## TE QUESTIONS

1) What do you mean by a database? Give two examples.
2) How will you assess the database requirements?
3) Explain the considerations to be given while assessing database requirements.
4) What is the need for logical structuring of a database?
5) What do you mean by Key Fields?
6) State the importance of Key Field with the help of an example.
7) Briefly explain the procedure for creating a database?
8) List out the commonly available components in LibreOffice Base database panel?
9) What are the objects available in database panel of LibreOffice?
10) Write short notes on:
a) Tables b) Forms c) Queries c)Reports
11) Briefly explain how a table is created?
12) What do you use for inputting data in to a data table in LibreOffice Base?
13) Data stored in tables are not directly accessible, but through certain objects it is possible. Explain the underlying concept described here.
14) State briefly the various modes available for report generation in LibreOffice Base.
15) What is an identifier? Give an example.
16) What is a foreign key? Give an example.
17) Describe the steps for setting a primary key?
18) What is the use of relationships in LibreOffice Base?
19) Describe briefly the steps for creating and deleting relationships?
20) Explain the steps for creating a student table for storing name, class, sex and marks in 6 subjects.
21) What do you mean by data types? Give examples.
22) Write any five data types and state its suitability.
23) Explain how font and font size of a label can be changed.
24) Explain the procedures for adding a List Box to a form.
25) Explain the procedures for adding a Combo Box to a form.
26) Explain the procedures for adding a Push Buttons to a form.
27) Explain the procedures for adding a Radio Button/ option button

to a form.

28) What is the use of option buttons in a form?
29) Explain the steps for adding a Heading to a form.
30) What are sub forms in LibreOffice Base?
31) Distinguish between "select query " and " action query" in LibreOffice Base.
32) Distinguish between static report and dynamic reports in LibreOffice Base.
33) List out the steps in designing a report.
34) Explain the steps for creating a report using Wizard in LibreOffice Base.
35) Write notes on :
    a. Page Header
    b. Details or Report Body
    c. Page Footer

## PE QUESTIONS

1) Create a table with the following details

- Name
- Sex
- Date of Birth
- Class
- Mark 1
- Mark 2
- Mark 3
- Mark 4

a) Set primary Key

b) Enter two imaginary records and display records.

2) Create two tables

| Table I | Table 2 |
|---|---|
| Admission Number | Admission Number |
| Name | Mark1 |
| Age | Mark2 |
| Sex | Mark3 |
| Address1 | Mark4 |
| Address 2 | Mark5 |

b) Create Relationships

3) i) Create a table with the following fields

a. Account Code
b. Account Name
c. Account Group
(Save table with the name TBLACCOUNTS)

ii) Create a form to add the following records to table TBLACCOUNTS

001 - Salary a/c-----Indirect Expenses

002-Rent paid----Indirect expenses

003---Building a/c---Fixed Assets

004---Wages---------Direct Expenses

005---Avinash's a/c----Sundry Debtors

Create a query to display all accounts under the Group "Indirect Expenses".

4) Create a table with the following

| Admno | studname | studsex | studclass | studage | studplace | studmark |
|---|---|---|---|---|---|---|
| 7011 | Avinash | M | S2 | 15 | Idukki | 67 |
| 7012 | Lakshmi | F | C1 | 15 | Palakkad | 60 |
| 7013 | Arya | F | C2 | 16 | Palakkad | 70 |
| 7014 | Adithya | M | C2 | 16 | Idukki | 45 |
| 7015 | Nisha | F | S2 | 15 | Palakkad | 69 |
| 7016 | Sreekala | F | C2 | 16 | Idukki | 50 |

a. Create a query to display

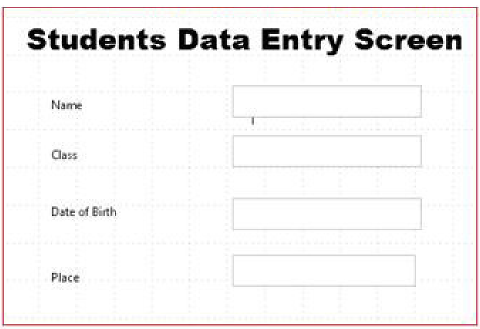
i. Number of students coming from "Palakkad"

ii. Number of students who scored marks greater than 65

iii. List of pupils whose name starts with "A"

iv. List of pupils whose class=C2 and sex=F

5) Create a simple form with necessary controls to display the following screen.




*(Hint: No need to create table)*

6) Prepare Pay Roll of the following employees

| EmpID | EmpName | Basic Pay | PF Loan |
|---|---|---|---|
| 1001 | Albin | 39500 | 2500 |
| 1002 | Aleena | 41500 | 3000 |
| 1003 | Devika | 40000 | 0 |
| 1004 | Athul | 48000 | 4000 |
| 1005 | Don | 36000 | 1650 |
| 1006 | Sreelakshmi | 32000 | 1000 |
| 1006 | Bobby | 0 | 1800 |
| 1007 | Sulfia | 49000 | 1700 |
| 1008 | Georgian | 25000 | 0 |

Additional Information

a) DA is to be provided @93% of Basic Pay
b) HRA 1750
c) PF Subscription 20% of Basic Pay
d) TDS is to be deducted @10 of Gross Pay

Display Payroll statement

7) Create a table "TBLSALES" with the following fields

AccountCode, AccountName, AccountCat, AccountType, TrasAmount

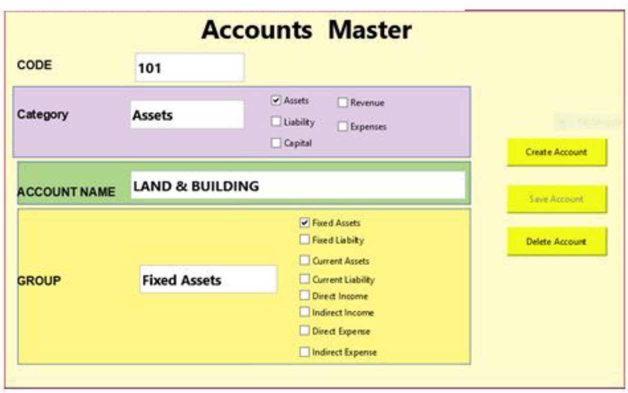
a) Create a simple form and add the following controls

i. Add a list box to Select Account name " Purchases and Sales"
ii. Add second list box to select Account category " Income and Expenses"
iii. Add a check box to select the options " Dr or Cr"
iv. Insert the following records

| AccountCode | AccountName | AccountCat | AccountType | TrasAmount |
|---|---|---|---|---|
| 4001 | Sales a/c | Income | Cr | 40000 |
| 5001 | Purchases | Expenses | Dr | 35000 |
| 5002 | Purchases | Expenses | Dr | 55000 |
| 4002 | Sales | Income | Cr | |

b) Open the table and display the records.

8) Create a Form in design view and add the following controls




(No need to create or connect to a table. Only layout is expected)

# APPENDIX

## Lab Work 1

Enter the following in a LibreOffice Base Table with file name "TBL_EMPLOYEES

| EMP_ ID | EMP_ NAME | EMP_SEX | EMP_BASIC |
|---|---|---|---|
| 7010 | SINTHARA | FEMALE | 58000 |
| 7011 | SARVY | MALE | 62000 |
| 7012 | LIGY | FEMALE | 55000 |
| 7013 | SIBI | MALE | 70000 |
| 7014 | PAULRAJ | MALE | 65000 |
| 7015 | RINCY | FEMALE | 49000 |

a) Display the name of employees drawing Basic pay greater than or equal to 60000

b) Name of employees beginning with "S"

### Process:

Step 1 : Create Table: Table → Create Table in Design View

Step 2 : Enter field names and select suitable data types

| | Field Name | Field Type | |
|---|---|---|---|
| | EMP_ID | Integer [ INTEGER ] | Used for Employee Number |
| | EMP_NAME | Text [ VARCHAR ] | Used for Employee Name |
| | EMP_SEX | Text [ VARCHAR ] | Used for Employee Sex |
| | EMP_BASIC | Decimal [ DECIMAL ] | Used for Employee Basic Pay |

Fig. Lab1.1

Step3 : Set primary key

- Click in the empty box on the right of EMP_ID field and right click.
- Click on the "Primary Key". Now EMP_ID has been set as Primary field

Step4 : Save the table with the file name "TBL_EMPLOYEES"

Step5 : Create a Form Using Wizard.

- Create Form: Use Wizard to create form
- Select table "TBL_EMPLOYEES" and add its fields to the form

- Save the form with a suitable name
- Open the form and input data in to tables for six employees

Step6 : Create Query

- Create Query: Use Wizard to create Query
- Select table "TBL_EMPLOYEES" and add its fields to the query
- Save the query and give a query name
- Modify the query (Edit) and set criteria

Step7 : Criteria (a): employees drawing Basic pay greater than or equal to 60000

i. Click in the criteria column against the field "EMP_BASIC".

ii. Type the criteria: " >=60000"

| | | | | |
|---|---|---|---|---|
| Field | EMP_ID | EMP_NAME | EMP_SEX | EMP_BASIC |
| Alias | EMP_ID | EMP_NAME | EMP_SEX | EMP_BASIC |
| Table | tblemployees | tblemployees | tblemployees | tblemployees |
| Sort | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ |
| Function | | | | |
| Criterion | | | | >=60000 |

Fig. Lab1.2

iii. Run the query

The output is:

| EMP_ID | EMP_NAME | EMP_SEX | EMP_BASIC |
|---|---|---|---|
| 7011 | SARVY | MALE | 62000 |
| 7013 | SIBI | MALE | 70000 |
| 7014 | PAULRAJ | MALE | 65000 |

Fig. Lab1.3

Step 8 : Criteria (b) Name of employees beginning with "S"

- Modify the Query (Right Click on query name and Edit)

- Click in the criteria column against the field "EMP_NAME"
- Type criteria " Like S*" and run the query
- The output is:

| EMP_ID | EMP_NAME | EMP_SEX | EMP_BASIC |
|---|---|---|---|
| 7010 | SINTHARA | FEMALE | 58000 |
| 7011 | SARVY | MALE | 62000 |
| 7013 | SIBI | MALE | 70000 |
| | | | |

Fig. Lab1.4

## Lab Work 2

Prepare a Payroll of Employees with the following details:

| EMP_ ID | EMP_NAME | EMP_BP | EMP_DA (20% of BP) | HRA | EMP_GROSS |
|---|---|---|---|---|---|
| 201 | ARYA | 40000 | | 250 | |
| 201 | AMMU | 41500 | | 250 | |
| 203 | ADITHYA | 48000 | | 250 | |
| 204 | AVINASH | 54000 | | 250 | |

a) Create a Query to compute Gross Salary

## Process:

Step1 : Create Table: Create Table in Design View

- Enter field names and select suitable data types
- Set primary Key and save table with the name "TBL_SALARY"

| Field Name | Field Type |
|---|---|
| EMP_ID | Integer [ INTEGER ] |
| EMP_NAME | Text [ VARCHAR ] |
| EMP_BP | Decimal [ DECIMAL ] |
| EMP_HRA | Integer [ INTEGER ] |

Fig. Lab 2.1

Step2 : Create Form: Use Wizard to create form

- Open Form and input data

| | EMP_ID | EMP_NAME | EMP_BP | EMP_HRA |
|---|---|---|---|---|
| | 201 | ARYA | 40000 | 250 |
| | 202 | AMMU | 41500 | 250 |
| | 203 | ADITHYA | 48000 | 250 |
| | 204 | AVINASH | 54000 | 250 |
| | | | | |

Fig. Lab 2.2

Step 3 : Create Query: Use Wizard to create Query

- Select table "SALARY" and add its fields to the query
- Save the query and give a query name
- Right Click on query name àEdit to open the query

Step 4 : Add computational field

- Click in the top cell of the first blank field and select "TBL_SALARY.EMP_BP"
- Alter the field name to change it as a formula: "TBL_SALARY.EMP_BP*20/100"
- In the Alias box , type "DA"
- Click in the top cell of the next blank field and type a field parameter as:

  "TBL_SALARY.EMP_BP+( TBL_SALARY.EMP_BP *20/100)+ TBL_SALARY.EMP_HRA" and type " GROSS" in the Alias column.

| | | | | | | |
|---|---|---|---|---|---|---|
| Field | EMP_ID | EMP_NAME | EMP_BP | EMP_HRA | "EMP_BP" * 20 / | "TBL_SALARY"." |
| Alias | | | | | DA | GROSS |
| Table | TBL_SALARY | TBL_SALARY | TBL_SALARY | TBL_SALARY | | |
| Sort | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ | ☑ |

Fig. Lab 2.3

Running this query will produce the following output.

| | EMP_ID | EMP_NAME | EMP_BP | EMP_HRA | DA | GROSS |
|---|---|---|---|---|---|---|
| | 201 | ARYA | 40000 | 250 | 8000 | 48250 |
| | 202 | AMMU | 41500 | 250 | 8300 | 50050 |
| | 203 | ADITHYA | 48000 | 250 | 9600 | 57850 |
| | 204 | AVINASH | 54000 | 250 | 10800 | 65050 |
| | | | | | | |

Fig. Lab 2.4

## Lab Work 3

Create Tables Named "TBL_PERSONNEL" and "TBLPAY" from the following details

Table-1

| tblEmployee | |
|---|---|
| EMP ID | EMPNAME |
| 2001 | JUBI |
| 2002 | NURA |
| 2003 | IVISH |

Table- 2

| tblPay | | |
|---|---|---|
| EMP ID | BP | HRA |
| 2001 | 10000 | 1500 |
| 2002 | 20000 | 1500 |
| 2003 | 30000 | 1500 |

## Process:

Step 1 : Create two tables, select field types, set primary key and Save file

| Table Name | Field name | Data Type | Primary Key | Save File Name |
|---|---|---|---|---|
| tblEmployee | EMPID | TEXT | YES | tblEmployee |
| tblEmployee | EMPNAME | TEXT | | |
| tblPay | EMPNO | TEXT | YES | tblPay |
| tblPay | BP | DECIMAL | | |
| tblPay | HRA | DECIMAL | | |

Step 2 : Create relationship

- o Tools → Relationships → Add Tables
- o Join EMPID of tblEmployee and EMPNO of tblPay

Step 3 : Create a form

- o FormsàUse Wizard to create form
  - → Select table tblEmployee and add its field
  - → Add Sub Form: Status - Checked (put tick mark)
  - → Sub form based on existing relation : Status -selected
  - → Select tblPAY
  - → Add necessary fields
  - → Select data sheet view for both man and sub form.
  - → Select Data Entry Mode :The form is used for entering new data only → click to select this option.

→ Apply any styles

→ Give a file name "frmEMPLOYEE"

→ Modify the form to align, change labels etc

→ Make data entry.

Step 4 : Create a Query and add necessary fields

Step 5 : Run the Query to display all records

**Output**

| EMPID | EMPNAME | BP | HRA |
|---|---|---|---|
| 2001 | JUBI | 10000 | 1500 |
| 2002 | NURA | 20000 | 1500 |
| 2003 | IVISH | 30000 | 1500 |

Record | of 3

Fig. Lab 3.1

## Lab Work 4

Prepare a Payroll statement from the following details

| EMPID | EMPNAME | BP | DA(10% OF BP) | TOTAL PAY |
|---|---|---|---|---|
| 200 | KALA | 40000 | | |
| 201 | NISHA | 20000 | | |
| 202 | AMMU | 30000 | | |

### Process:

Step 1

Create tables, select field types, set primary key and Save file

| Field name | Data Type | Primary Key | Save File Name |
|---|---|---|---|
| EMPID | TEXT | YES | tblPAYROLL |
| EMPNAME | TEXT | | |
| BP | DECIMAL | | |

Step 2 : Create a form

o Forms → Use Wizard to create form

→ Select table tblEmployee and add its field

→ Save the form with the name "FRMPAYROLL"

→ Make data entry

Step 3 : Create a Query and add necessary fields

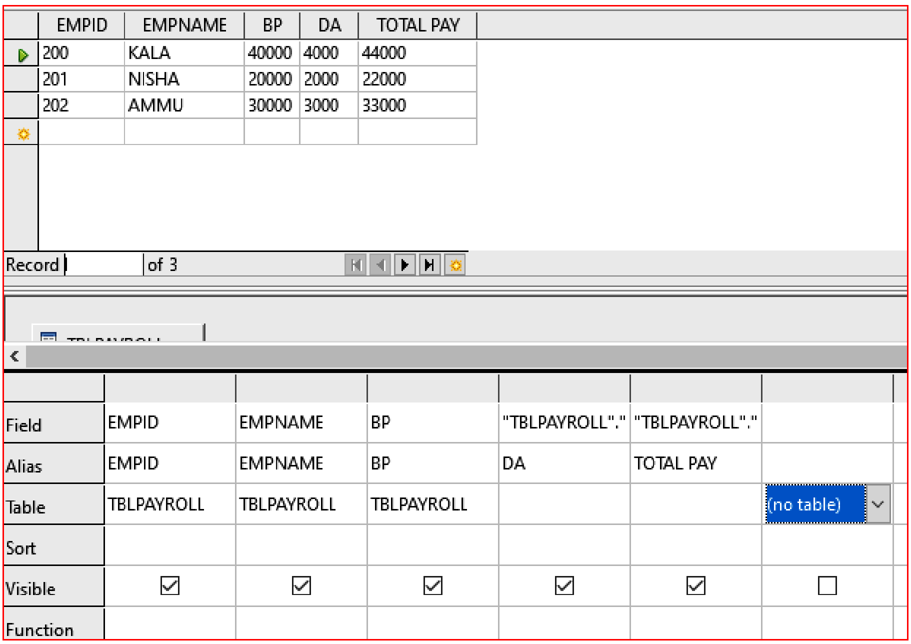
Step 4 : Open the Query in Design mode

Step 5 : Click in the top cell of the first blank field and type "tblPAYROLL.BP*10/100" and also type the a new column heading "DA" in the Alias column

Step 6 : Click in the top cell of the next blank field and type "tblPAYROLL.BP+tblPAYROLL.BP*10/100". Type the a column heading "TOTAL PAY" in the Alias column

Step 7 : Run the Query.

**Output**



| EMPID | EMPNAME | BP | DA | TOTAL PAY |
|---|---|---|---|---|
| 200 | KALA | 40000 | 4000 | 44000 |
| 201 | NISHA | 20000 | 2000 | 22000 |
| 202 | AMMU | 30000 | 3000 | 33000 |

Record | of 3

| | | | | | | |
|---|---|---|---|---|---|---|
| Field | EMPID | EMPNAME | BP | "TBLPAYROLL"." | "TBLPAYROLL"." | |
| Alias | EMPID | EMPNAME | BP | DA | TOTAL PAY | |
| Table | TBLPAYROLL | TBLPAYROLL | TBLPAYROLL | | | (no table) |
| Sort | | | | | | |
| Visible | ☑ | ☑ | ☑ | ☑ | ☑ | ☐ |
| Function | | | | | | |

Fig. Lab 4.1

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