

ગુજરાત રાજ્યના શિક્ષણવિભાગના પત્ર-ક્રમાંક  
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# YOGA, HEALTH AND PHYSICAL EDUCATION

## Standard 10



### 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 respect my parents, teachers and all my elders and treat everyone with courtesy.

I pledge my devotion to my country and its people.

My happiness lies in their well-being and prosperity.

રાજ્ય સરકારની વિનામૂલ્યે યોજના હેઠળનું પુસ્તક



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**Authors**

Dr. G. T. Sarvaiya (Convener)  
 Shri Kantibhai Patel (Convener)  
 Dr. Vivyanshu Dave (Convener)  
 Dr. Kamlesh Rajgor  
 Shri Atmaram Patel  
 Shri H. J. Sherasiya  
 Dr. Keshubhai Morasania  
 Shri S.I. Sidda  
 Shri Varjangbhai Vala

**Translators**

Dr. G. T. Sarvaiya  
 Shri Kantibhai Patel  
 Shri Vinayak K. Dhotre  
 Dr. Navinchandra Chaiyara  
 Shri Arvind R. Kapadia

**Reviewers**

Dr. Jatin J. Mehta  
 Dr. C.B. Kagthara  
 Dr. Rustam Nariman Sadari  
 Dr. Neeraj Silavat  
 Dr. Yajuvenrasinh Jethava  
 Dr. Suresh Gadhavi  
 Sri Prakash Joshi

**Drawing**

Shri Umesh Bhatia  
 Shri Rajesh Baria

**Co-ordinator**

Shri Ashish H. Borisagar  
 (Subject Co-ordinator : Maths.)

**Preparation and Planning**

Dr. Kamlesh N. Parmar  
 (Deputy Director : Academic)

**Printing and Planning**

Shri Haresh S. Limbachiya  
 (Deputy Director : Production)

**PREFACE**

Gujarat State Board of School Textbooks has prepared new textbooks as per the new curricula developed by the Gujarat State Secondary and Higher Secondary Education Board and which has been sanctioned by the Education Department of the Government of Gujarat. A panel of experts from Universities/ Colleges, Teachers Training Colleges and Schools have put lots of efforts in preparing the manuscript of the subject. It is then reviewed by another panel of experts to suggest changes and filter out the mistakes, if any. The suggestions of the reviewers are considered thoroughly and necessary changes are made in the manuscript. Thus, the Textbook Board takes sufficient care in preparing an error free manuscript. The Board is vigilant even while printing the textbooks.

The Board expresses the pleasure to publish the Textbook of **Yoga, Health and Physical Education, Std. 10** which is a translated version of Gujarati. The Textbook Board is thankful to all those who have helped us in preparing this textbook. However, we welcome suggestions to enhance the quality of the textbook.

**H. N. Chavda**

Director

Date: 04-02-2017

**Dr. Nitin Pethani**

Executive President

Gandhinagar

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## FUNDAMENTAL DUTIES

**It shall be the duty of every citizen of India\*:**

- (a) to abide by the Constitution and respect its ideals and institutions, the National Flag and the National Anthem;
- (b) to cherish and follow the noble ideals which inspired our national struggle for freedom;
- (c) to uphold and protect the sovereignty, unity and integrity of India;
- (d) to defend the country and render national service when called upon to do so;
- (e) to promote harmony and the spirit of common brotherhood amongst all the people of India transcending religious, linguistic and regional or sectional diversities; to renounce practices derogatory to the dignity of women;
- (f) to value and preserve the rich heritage of our composite culture;
- (g) to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures;
- (h) to develop the scientific temper, humanism and the spirit of inquiry and reform;
- (i) to safeguard public property and to abjure violence;
- (j) to strive towards excellence in all spheres of individual and collective activity so that the nation constantly rises to higher levels of endeavour and achievement;
- (k) to provide opportunities for education for his child, or a ward between the age of 6 to 14 years as the case may be.

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\*constitution of India : Section 51-A

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## About this textbook

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It is stated in National Curriculum Frame work 2005 that Yoga, Health and Physical Education is an essential for development of students. The problems occurring in the school can be solved with the help of this subject. The child's development in the school depends on nutrition and wellplanned physical Activity programmes. This subject is important for allround development of child and development for intellectual and responsible citizen. Yoga and Physical education contribute to the physical, social and mental development of child. So the teacher should take proper care to teach and organize suitable activities.

With reference to National Curriculum Frame work 2005, the subject matter of all subjects has been framed anew keeping various stages in mind.

In this book, a well co-ordinated approach based on new syllabus has been adopted for the first time. Yoga is an immortal valuable heritage of Indian culture. As per NCF 2005 the need - based approach is adopted. The weightage is given for all round development of child. Collective responsibility in the filed of health and in the individual life should be developed with the help of this subject. The demand of children is tried to be integrated with the book. Sports and games of the local area are included. More over games of other countries are also included in the book. An attempt has been made to reduce the load of subject matter and hypothesis. Three different books on Yoga, Health and Physical education have been incorporated in a single text book as an independent subject of study.

Unit : 1 : Yoga education : In this unit, internal parts of Ashtang Yoga, Pranayam, Bandh and Asana are included. The matter of Dharana, Dhyan and Samadhi of Ashtang Ang is given. Anulom-Vilom, Bhastrika, sheetali and seetkari pranayam are included in Pranayam. The matters of Mulbandh, Uddiyanbandh, and Jalandhar bandh are included in tribandh.

In Asanas, meaning, basic position, method, to take care and benefits of asanas are given. Akarnadhanurasana, Ushtrasana, Lolasana, Garbhasana, Pavanmuktasana, Setukasana, Naukasana, Chakrasana, Bhujanagasana, Shalbhasana, Garudasana and Makarasana are included in Asana.

The necessary pictures and figures are given to help the understanding of an unit. Yoga science is an immortal valuable heritage of Indian Culture. Yoga has a capacity to put the spiritual approach of life. Yoga is a perfect method of skilful work, freedom from stress, concentration of mind, original creation and development of personality. This unit will be useful to the students.

### Unit 2 : Health Education

In this unit, there are three capters, in which important matter for maintaining child development

is given. (1) Infectious and non- infectious diseases (2) Approved Systems of medicine and (3) Awareness about HIV and AIDS are included in this unit. This unit is useful for maintaining the child's health.

Unit 3 : Physical Education : In this unit, two types of activities are included

(1) Athletics : In this subunit. Ground, equipments, skills and rules of Running, High jump and Discus Throw are given with figures and pictures.

(2) Games : In this sub-unit, Ground, equipments, skills and rules of Kabaddi, Basketball, Handball, vollyball and Football are given with figures and pictures.

The instruction of NCF 2005 for Textbook should be carried out. It is mentioned that the unit of Yoga is included. The entire group must be taken together as a comprehensive health and Physical Education curriculum, replacing the fragmentary approach in schools today. As a core part of the curriculum, time allocated for games and yoga should not be reduced or taken away under any circumstances.

We hope that this book assists in the Herculean task of development and national building. It shall also effectivley contribute in making the students knowledgeable and intelligent along with moulding them as responsible citizens.

## 1

## Internal organs of Ashtanga yoga

Yoga vidya is an invaluable gift inherited to us by our ancient saints. Maharshi Patanjali has described Yoga shashtra in the granth named Yoga darshan. As eight organs (angas) are included in Yoga, it is called Ashtang Yoga. Ashtang Yoga is distributed in two parts as Bahirang (External) and Antarang (Internal).

First five Angas of Ashtang Yoga :

1. Yama
2. Niyam
3. Asana
4. Pranayam
5. Pratyahar.

These five angas are called Bahirang Yoga. These five angas are associated with external activities. Hence they are called Bahirang Yoga. The remaining three angas: Namely Dharana, Dhyan and Samadhi are related to the conscience.' Hence they are called Antarang Yoga in the Yogashashtra.

Antarang Yoga starts with Dharana. Pratyahar, its preceding anga is known as the door of Antarang yoga study of the Antarang Yoga. Dharana, Dhyan (Meditation) and Samadhi, all together are known as sanyam (control).

The body, senses and the mind are well - organised by Bahirang Yoga, while the consciousness is internally organised through Antarang Yoga. Control can be established on the material body through the study of Bahirang yoga, while control on the spiritual body can be established through the study of Antrang Yoga. Study of Antrang Yoga is also called as Raj-Yoga.

Now we would study all the three angas of Antarang yoga in detail.

### ● Dharana

Dharana is the first anga of Antarang Yoga : Maharshi Pantanjali has said in the Yoga-Shashtra.

*‘देशबन्धश्चिजस्यधारणाः ।’*

That is to say :

To control the mind in limit of one region is called Dharana. The mind purified with the adequate study of Bahirang yoga gets concentrated at one place. It is called 'Dharana'. The general meaning of Dharana is concentration. Sadhana to increase the concentration of the mind is called Dharana. With the help of Dharna only, the mind can be concentrated successfully at one point.

*‘धारणा पंचनष्टिका ।।’* That is,

The mind remains in the contemplated aim for five 'ghadi' (moments) is called Dharana. In other words to get the pure mind concentrated in some object or idol of one's favourite deity is called Dharana. Concentration is very important in life. With the help of concentration situation, mind and senses can be controlled.

Dharana can be performed internally and externally. First of all, the sadhak should practise external Dharana and then internal Dharana.

In External Dharana, the mind can be concentrated on some idol, jewel, gem, torch (Jyoti) by making vision steady at one place through Tratak with eyes open, while in internal Dharna the mind can be concentrated on material objects with closed eyes. In the same way effect can be made to see the sun, the star, God etc. with open eyes. The followings three things are inevitable for getting success in Dharana. (1) Patience (2) Enthusiasm (3) Holiness

### ● **Importance of Dharana**

Antranga yoga begins with Dharana. Hence it is very important.

- (1) If the sadhaka yogi has performed dharana properly, he can attain meditation first and then samadhi. Steady Dharana is the pre-condition of meditation and Samadhi.
- (2) If the mind has concentration, unsteadiness prevalent in the student gets removed. Concentration is very much essential in studies. Dharana removes unsteadiness of the mind and brings steadiness and concentration, which is very useful for the student in his studies.
- (3) Regular practice of Dharana brings steadiness in the mind and thereby increases self-confidence.

### ● **Subjects of Dharana**

Subjects of Dharana are of five different forms:

- (1) **External Subjects** : Idol, picture, Omkar, Jyoti (torch) etc.
- (2) **Mental Subjects** : Branch of a tree, sea, sky, idol of the God. External subjects imagined mentally.
- (3) **Subjects** in the form of external organs of the body. The tip of the nose, eye-brow etc.
- (4) **Internal subjects of the body** : The heart, the navel, chakras etc.
- (5) **Subjects beyond the reach of the senses**: Hearing the sound (Nada), Flame darshan etc.

### ● **Methods for Dharana**

Maharshi Pantanjali has described various beautiful methods in Yoga sootra:

- (1) Keeping the mind continuously associated with some special distinguishing thoughts.
- (2) Remembering some object, or mental recitation of one's favourite God.
- (3) Taking support of some hint attained in dreams during sleep.
- (4) Concentrating the mind on any distinguished person who is completely non-attached.

Dharana is a process of all these three: Sadhaka (One who practises Dharana), Aim (Subject of Dharana) and Dharana (Concentration). All these three have independent existence in Dharana. Subjects (Aims) can be of three types. Tratak included in shatkriyas is also considered as the best means of Dharana.

- (1) Relating to material (Aadhibhautik)
- (2) Relating to fate (Aadhidaivik)
- (3) Spiritual (Relating to the soul) (Adhyatmik)

(4) If Dharana is practised everyday faithfully and regularly, there is restraint in the tendencies and thoughts of the mind.

‘चिञ्जवृजि निरोधस्य ।’

Hence the negative thoughts are removed and it helps in purification of nadi.

## Meditation (Dhyan)

Maharshi Patanjali has considered meditation as the seventh anga which is included in Antranga Yoga but after practising Bahiranga angas continuously it becomes easier to practise Antaranga yoga.

The subject of Dharana and Meditation (Dhyana) is the same: i.e. concentration of the mind. In Dharana, concentration of the mind is not maintained continuously, but the mind can be concentrated through constant practice. It is called Meditation (Dhyana) i.e.

“तत्र प्रत्ययैकतानता ध्यानम् ।”

- i.e. to keep the mind steady without any type of thought in any situation is meditation.
- Concentration of tendencies of the mind is meditation

‘ध्यानं स्यात् षष्टिघटिकम् ।’

The mind remains steady for sixty ghadi in the aim. It is meditation.

### ● Types of Meditation

In Goruksh method there is a description of two types of Meditation :

- (1) Meditation with attributes
- (2) Meditation without attributes

#### (1) Meditation with attributes

Meditation of which the subject is the three attributive (Maya) i.e. to meditate on Shri Vishnu, Fire, the Sun, Image etc. is called meditation with attributes (or attributive meditation)

It is of three types:

##### (i) Feet (charan) Meditation

Meditation on feet (charan) of the God or Sadguru is called charan Meditation.

##### (ii) Form Meditation

To meditate on the sun, moon, God-Goddess or shri sadguru and to see their form within heart with closed eyes is called the form meditation.

##### (iii) Meditation on the tip of the nail

Join mutually fingers of both the hands performing kumbhak and keep both the thumbs parallel to each other. Hold the hand high and arrange it such that it is in straight line of sight of the nail of the thumb. Keeping both the hands in the same position, bring them downward, while performing Rechak. At last, bring both the hands in the lap. Mind that, during this whole process your vision (sight) should be on the tip of the nail of the thumb.

If your attention gets diverted inbetween, repeat the experiment from the very beginning.

#### (2) Meditation without Attributes

The meditation of which the subject is Para-brahma beyond three attributes is called meditation without attributes.

It is of four types:

- (A) Tip of the nose
- (B) Middle of the eye-brow.
- (C) Chanting of the mantra
- (D) Breathing in and out (Respiration)



**(A) Meditation on tip of the nose :** In this type of meditation the vision is to be made steady on the tip-part of the nose.

**(B) Meditation on the mid-part of both the eye-brows :** Sight is to be made steady on the mid-part of both the eyebrows.

**(C) Chanting of Mantra- Chanting meditation :** Sight is to be on the tip of the nose and then to chant the mantra. It is called meditation with chanting of mantra.

**(D) Breathing in and out (Respiration).** The mind is to be made steady on respiration and then it is to be observed.

### ● **Form and importance of meditation in yoga**

When the sadhaka has developed purity of the mind through Bahirang yoga, then Meditation in Anrang yoga is possible. If maturity is achieved in meditation, it becomes easy to achieve Samadhi stage. The sadhaka has to achieve condition of thoughtlessness of the mind through meditation. When the meditator disappears and there remain only the aim (Subject of meditation) and meditation (Process), that condition is nothing but meditation.

The Yoga-sadhan a keeping meditation in the centre is known as meditation-yoga.

In the adhyaya-6 of the Bhagvad-Gita, explanation about where to sit, how to sit in meditation is given.

- The Yogi stays in a lonely place, makes his mind steady and senses free from sensory subjects and tries to unite his Atma with the God (Paramatma)

- Sit on a carpet spread in well ventilated, holy place and make the mind quiet and meditate for purification of Atma. Meditation be done continuously for long, on the contrary it happens naturally. The sadhaka can remove the unsteadiness of his mind by practice of regular meditation and through renunciation (non-attachment) and devotion to God.

### ● **Benefits**

- By chanting 'omkar' (Chanting of mantra- Meditation) the process of breathing becomes efficient. Blood- circulation, digestion and efficiency of nervous system improves.

- Negative thoughts are removed and low mental condition can be eradicated.

- Meditation makes breathing process easy and thereby gets relief in diseases like Asthma, hysteria, forgetfulness

- Happiness in the mind without (any) reason, smile on face and humbleness of nature - this is the result of meditation.

-Bodily healthfulness is achieved and new diseases are kept aside

- Power of remembrance and concentration is enhance Mind becomes controlled.

- The practitioner Sadhaka of Yoga becomes fearless and of sound mind.

- The sadhaka goes far ahead in the spiritual path and he comes and stands at the door of achieving God.

Thus, Meditation gives happiness, peace and satisfaction. Thereby, what life is, can be understood and enjoyed.



## Samadhi

In Maharshi Patanjali Yogadarshan, Samadhi is the eighth and the last step and it is the third step in the Antranga yoga. The subject of Dhrarna, Dhyan and Samadhi is one and the same, but the degree of concentration with the subject goes on increasing.

When the Meditator (One who meditates) and meditation (Process)- both get engrossed in the aim, samadhi is realized. Then only the aim (Dhyeya) is experienced in Samadhi.

That is to say Samadhi is fulfilled as a result of continuous and constant meditation and mastery therein i.e. the Sadhaka automatically gets absorbed in samadhi.

### • Definitions of Samadhi

According to Maharshi Patanjali

‘तदेवार्थमात्रनिर्भासं स्वरूपशून्यमिव समाधिः ॥ ’ i.e.

When the Meditation becomes enlightened in the form of aim only and free from its own self, it is called samadhi i.e. Meditation becomes similar to the aim (Dhyeya) and free from the process of meditation means Samadhi.

- Meditation, its excellence and mature stage means Samadhi.
- According to Maharshi Yagnyavalka, the stage of oneness (unity) of the individual soul (Jeevatma) and the God (Paramatma) is Samadhi.
- When in meditation only the aim (Dhyeya) is experienced and the consciousness (sense) of one's own form becomes zero, that stage is called samadhi.
- Samadhi means restraint from tendencies of the mind.
- It is said in Hath -yoga Pradeepika that the salt dissolved in water is in the water itself, even then it does not appear in the form of salt, as it has become one with water. Only water appears. In the same way in the stage of Samadhi, meditator (Sadhaka) and meditation have become one and identical with the aim. Hence there is only presence of aim.

Thus in Samadhi the mind controlled from its tendencies attains equality i.e. there remains no existence of the mind. In other words in the stage of Samadhi, the 'mind' becomes 'no- Mind'.

The mind gets absorbed. There is complete concentration in the stage of meditation, Even then the sadhaka is conscious about his own natural stage. But in Samadhi, there is only the feeling of existence of mind. The consciousness of natural existence is removed. The Yogi experiences himself only in the form of spirit (Soul), which is the pure and true form of the Atman. At last the feeling of non-duality of the Atma in Paramatma manifests and the yogi gets completely absorbed in it i.e. he attains liberation (emancipation) or Moksha.

In Samadhi the aim, the meditator and the meditation become one i.e. direct experience (प्रत्यक्षानुभूति) of Brahma becomes possible. He becomes free (liberated) from the bondage of place and time. It is called Samadhi in which the aim alone is awakened.

In Shri SkandhPurana.

‘दिनद्वादशके नैव समाधिरिह भण्यते । ’ i.e.

The mind becomes steady for twelve days., it is called Samadhi.

## ● Types of Samadhi

Samadhi is mainly of three types:

- (1) Sabeej samadhi or sampragnyat (not free from thought) samadhi or Savikalpa samadhi
- (2) Nirbeej samadhi or Asampragnyat (Free from thought) samadhi or nirvikalpa samadh.
- (3) DharmaMedha Samadhi

### (1) Sabeej Samadhi or Sampragnyat Samadhi :

In this samadhi the subject of the aim is present. Sadhaka enters in the region of pragnya (Intelligence) beyond the mind. Hence it is called sampragnyat samadhi.

### (2) Nirbeej Samadhi or Asampragnyat Samadhi :

When the dependence of Aim-subject also drops down (liberated) because of continuous practice of sabeej samadhi along with aim-subject and there is only the experience of one's own pure form then Asampragnyat samadhi or nirbeej samadhi is accomplished.

- In Nirbeej samadhi the seeds (Beej) of Sanskara in the mind also get destroyed. Now the sadhaka is liberated from turning round of birth - death

- i.e. the mind is concentrated in sabeej samadhi, While in Nirbeej samadhi, the mind is restraint i.e. all the tendencies of the mind become inactive.

**(3) DharmaMedha Samadhi:** The Sadhaka gains knowledge of deep mysteries in the mind through continous practice of Sabeej and nirbeej samadhi. He who is free from desire of this knowledge also attains vivekbuddhi (power of discrimination) awakened and with the strength of knowledge of vivekbuddhi the sadhaka accomplishes DharmaMedha samadhi.

With fulfilment of DharmaMedha Samadhi the sadhaka becomes free from panch clash (Five pains) viz. Avidya (Ignorance), Existence (Ego), likes and dislikes and firm attachment (strong desire to live) are destroyed. and the actions (with their seeds) also get destroyed with the fulfilment of DharmaMedha samadhi pains and actions end.)

That's why it is said the great aim of yoga sadhana is restraint from mind - tendencies.

: 'योगः चिज्ञवृजि निरोधः । '

## Exercise

### 1. Answer the following questions in detail.

- (1) What is meant by external Dharana and internal Aadhibhautik Dharana (relating to material)
- (2) Explain the subjects of Dharana.
- (3) State and explain the types of meditation.
- (4) State and explain the types of Samadhi.
- (5) Explain the form and importance of Meditation in Yoga.

### 2. Answer the following questions in short

- (1) What is Dharana ?
- (2) Sadhana of which anga is essential for increasing concentration of the mind ?
- (3) What is Nirbeej Samadhi ?
- (4) What is meant by 'restraint of tendencies of mind' 'चिज्ञवृजि निरोधः ' ?
- (5) State the types of Meditation.

**3. Answer the following questions by selecting correct option from the options shown below:**

- (1) With what is the Antarang Yoga related ?  
(A) Bahirang                      (B) Bahirmukh                      (C) Niyam                      (D) Conscience
- (2) From which anga does the Antarang yoga start?  
(A) Dharana                      (B) Dhyan                      (C) Samadhi                      (D) Pranayam
- (3) What is the first Anga of Antarang Yoga?  
(A) Samadhi                      (B) Dharana                      (C) Yama                      (D) Meditation
- (4) What is ordinal numeral of the Dhyan in Antarang Yoga ?  
(A) Sixth                      (B) Fourth                      (C) Second                      (D) Fifth
- (5) What is the last anga of Ashtang yoga ?  
(A) Pranayam                      (B) Asana                      (C) Pratyahara                      (D) Samadhi

•

Pranayam is an important anga of 'Ashtang Yoga'. The meaning of Pranayam is pran + ayam i.e. withholding or spreading of breath. As we have studied earlier -

“तस्मिन्सति श्वासप्रश्वासयोगति विच्छेद प्राणायामः ।”

To do dispersion in the motion of inhaling and exhaling is pranayam. Pranayam is the Yogic study of breathing. By means of Pranayam the irregular breathing is controlled and made rhythmic. It has positive impression over the physical energy area (Sphere)

Over and above the mental instability gets rid - of and there is an increase in concentration, remembering power, decisive power and constructive power. But, before studying Pranayam, the accomplisher or a student must have the complete knowledge of the human respiratory system. One has to study specific alternance and scrutiny alongwith proper guidance.

This is the reason why it has been stated in Hathyog Pradeepika that

“प्राणायामेन युक्तेन सर्वरोगक्षयो भवेत् ।

अयुक्ताज्यासयोगेन सर्वरोग समुद्भवः ॥”

This means that, all the diseases of human body get rid of with proper study of pranayam but improper study with all the diseases are created. In olden Shastras it is stated that a lion can be controlled by Pranayam, but untactful and wrong study is like riding over the mad elephant.

#### • The form of Pranayam

According to Maharshi Patanjali there are four forms of pranayam as follows:

- (1) Poorak - in which the breath is taken into the lungs.
- (2) Kumbhak - Breath is with-held in the body. It is also called as Antar kumbhak.
- (3) Rechak - To exhale the breath from the lungs.
- (4) Bahyakumbhak - The breath is withheld outside the body. It means the breath is taken completely outside the lungs and with-held (to empty the lungs).

#### • Cautions for Pranayam

- (1) The practice of Pranayam should always be done with empty stomach.
- (2) The practice should be done in open, clean and pollution free atmosphere.
- (3) Peaceful and lonely place should be selected.
- (4) Early morning time is the best.
- (5) Practice of Pranayam, if done after physical cleanliness and the bath, is advantageous.
- (6) In Pranayam, the use of one's eye-sight, mudra, bandh or asana is done in proper proportions as per the requirements.
- (7) In the initial practice, an individual should do kumbhak as per capacity.
- (8) For Pranayam, the use of asanas like padmasana, siddhasana, swastikasana, vajrasana or sukhasana is proper.

#### • Purpose of pranayam

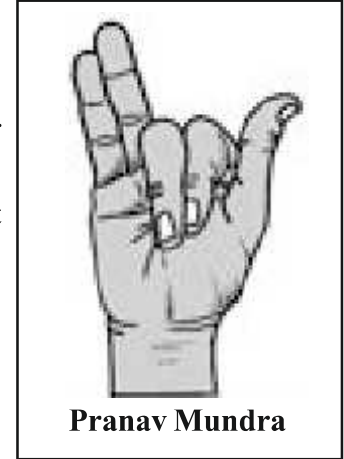
In Shastra, we find the descriptions regarding the benefits of Pranayam. But, according to the Ashtang Yoga of Maharshi Patanjali its purpose is specific. In the Sutra explaining the purpose of

Pranayam, it is said that -

“ततः क्षीयते अप्रकाशावरणम् ।” It means, because of Pranayam covering of ignorance is lessened or it gets rid of. The covering spread over the intelligence goes off and because of it, the physical faults (drawbacks) and in addition the mental deteriorations like attachment and jealousy also are removed. An individual's polite - etiquette awakens.

### 1. Sooryabhedan Pranayam :

- (1) Sit in siddhasana, padmasana or sukhasana.
- (2) Keep the left hand on the left knee in gyanmudra. Press the first two fingers of right hand in the root of right thumb. Keep the third finger (anāmika) and the last finger (kānīshthika) straight. This is Pranav Mudra. In pranav mudra close the left nostril with anāmika. Breathe in with right nostril, as much as possible. Now close the right nostril with the thumb.
- (3) Then have Jalandhar bandh and do antahakumbhak as long as possible.
- (4) At the end, release the Jalandharbandh and keeping the right nostril closed, breathe out with left nostril completely and perform rechak.



In Sooryabhedan Pranayam, the action of breathing always starts with right nostril. In shastras, the right nostril is called as sooryanadi or pinglanadi or purushnadi.

#### ● Repetitions :

In the beginning one can do 12 repetitions, gradually one can reach upto 36 repetitions.

#### ● Benefits :

- (1) Purifies the muscles of the face. Mind is purified.
- (2) Sinus disease of the nostril gets rid-of.
- (3) Some times there is sweating in the roots of hair. This is a good sign.
- (4) The worms of intestine are destructed.
- (5) Cough and gas troubles are removed. Body can tolerate the cold.
- (6) For low blood pressure-patients this pranayam is very miraculous.
- (7) The vices like yearning and anger are controlled.
- (8) It takes pran tattva up to sushumna nadi and becomes helpful to awake the power of kundalini.

### 2. Chandrabhedan Pranayam :

In Chandrabhedan pranayam, breathing action is totally opposite to that of sooryabhedan pranayam.

#### ● Methods

- (1) Sit in siddhasana, padmasana or sukhasana position. Keep the left hand on the left knee in gyanmudra.
- (2) Perform Pranav Mudra with right hand and close right nostril i.e. sooryanadi with the thumb and inhale completely with left nostril.
- (3) Perform Jalandhar bandh and have antahakumbhak. With hold the breath as per the tolerance capacity.
- (4) Then, release the jalandhar bandh and keeping the left nostril closed, exhale the breath completely through the right nostril.

In Chandrabhedan Pranayam, the action of breathing always starts with left nostril. In Shastras, the left nostril is called as chandranadi or Idanadi or Strinadi.

- **Repetitions :**

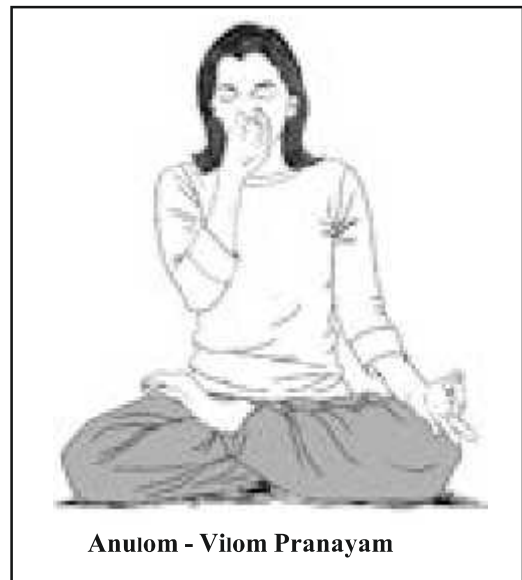
In the beginning one can do 12 repetitions. Gradually one can reach up to 36 repetitions.

- **Benefits :**

- (1) The muscles of the head get rest.
- (2) The diseases of acidity and those of the nostrils get rid-of. The unnecessary heat of the body is removed.
- (3) For high blood pressure patients this is the best pranayam.
- (4) The vices like fear and weakness temperaments disappear.
- (5) Makes one individual peace minded, compromising and practical.
- (6) It takes the pran tattva up to sushumna nadi and becomes helpful to awake the power of kundalini.

### 3. Anulom - Vilom Pranayam (Nadi - Shodhan Pranayam)

- (1) Sit in padmasana, siddhasana or any meditation asana.
- (2) Keep the left hand on the left knee gyanmudra.
- (3) Perform pranav mudra with right hand.
- (4) Now, close the right nostril with the help of the thumb and inhale the breath through the left nostril slowly and deeply. Then, close the left nostril, with anamika and kanishthika fingers and taking the chin towards the throat depression, perform the jalandhar bandh and withhold the breath inside.
- (5) After withholding the breath as per capacity, release the deep breath through the right nostril slowly and uniformly.
- (6) After completing the release of the breath i.e. rechak, breath in with the right nostril slowly and close the right nostril with the thumb.
- (7) After with-holding the breath as per the capacity, release it through the right nostril slowly.
- (8) Thus, it is one complete repetition of Anulom - Vilom Pranayam.



- **Repetitions :**

In the beginning one should practise with five repetitioins. Alongwith the practice one can increase the number of repetitions.

- (1) Always start practising poorak with the left nostril.
- (2) After poorak, perform rechak with the other nostril.
- (3) In no situation both the nostrils should be kept open at a time.

- **Benefits :**

- (1) Every cell gets the oxygen in enough quantity.
- (2) It controls high B. P.



- (3) It creates balance of Panch-Pran in the body.
- (4) The deterioration of the defects of gas, acidity and cough get rid-of.
- (5) Concentration, remembrance power, decisive power and self confidence are increased.
- (6) Keeps the mind peaceful and balanced.
- (7) Right and left minds are equally developed.

#### 4. Bhastrika Pranayam

- (1) Sit tension free in padmasan position.
- (2) Keeping the mouth and eyes closed breath in and breath out with the speed like the blow-pipe of blacksmith.
- (3) Thus, do continuously the action of inhaling and exhaling. When the body gets tired, use pranav mundra and inhale deeply in slow motion with right nostril, i.e. do poorak.
- (4) Then close both the nostrils, perform Jalandhar bandh and with-hold the breath i.e. do Antah Kumbhak.
- (5) After that, exhale (Rechak) the breath uniformly and slowly with left nostril.

##### ● Repetitions :

In the beginning practise for three repetitions and then while progressing go on increasing the repetitions.

##### ● Main Points :

- (1) There is no specification even in Hathyog pradeepika, as to how many times the actions of speedy inhaling and exhaling should be done, but in some of the researches it has been stated that speedy inhaling and exhaling can be done for thirty times.
- (2) Never do antaha kumbhak without Jalandhar bandh, because, otherwise it is harmful.

##### ● Benefits :

- (1) Digestion power becomes active.
- (2) Increases the breathing capacity.
- (3) Throat swelling goes off.
- (4) One gets relief in the disease like asthma.
- (5) The diseases of gas, acidity and cough gradually get rid-of.
- (6) It is helpful in removing the artery blockage of the heart.
- (7) All the diseases of respiratory system get rid-of.
- (8) Lungs and heart become strong.

#### 5. Sheetli Pranayam

- (1) Sit in padmasana or sukhasana. Keep both the hands on the knees, if necessary in jnan mudra.
- (2) Bring the tongue a little out of the mouth. Make the tongue round like the string of rubber or whistle.
- (3) Inhale slowly through the whistle of the tongue with pleasant voice.
- (4) With-hold the breath inside as per the capacity.
- (5) Then exhale through both the nostrils.



Sheetli Pranayam

- **Points to bear in mind :**

- (1) While inhaling allow the breath to pass through the rounded tongue.
- (2) It is essential to keep the mouth closed.
- (3) Jalandhar bandh and Mulbandh can be performed as and when required.
- (4) Sheetli Pranayam is an action like the breathing of a snake.

- **Repetitions :**

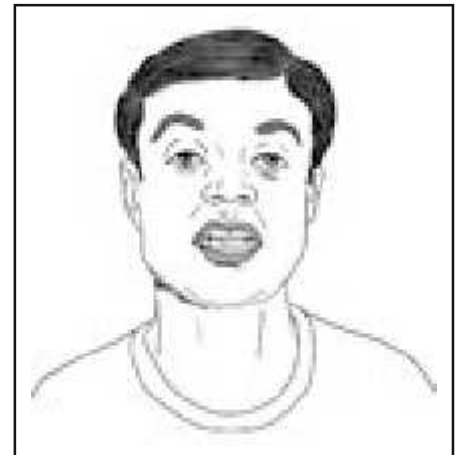
Do 24 to 36 repetitions daily. In summer the repetitions can be increased. In winter an individual having cough should not perform more repetitions.

- **Benefits :**

- (1) Gives cooling effect to the body. Thirst goes off.
- (2) Removes the disease of the throat and the spleen.
- (3) Removes indigestion and the acidity diseases.
- (4) Removes old fever and purifies the blood.

### 6. Sheetkari Pranayam :

- (1) Sit in padmasan or sukhasan.
- (2) Bend the tongue in such a way that it touches the palate.
- (3) Keep the teeth fixed and touching.
- (4) Breath in through the mouth with a voice.
- (5) With-hold the breath as possible as you can. One can perform Jalandhar bandh also.
- (6) Exhale slowly with both the nostrils.



**Sheetkari Pranayam**

- **Points to bear in mind :**

- (1) Whenever you inhale, the noise shall resemble like “Si” or “Sit”.
- (2) Keep both the jaws fixed and keep both the lips open.
- (3) Those who are suffering often from cold, cough and tonsils should not do this pranayam.

- **Benefits :**

- (1) This pranayam also creates the cold.
- (2) Removes effectively the acidity diseases.
- (3) When you are thirsty and are not in a position to get water then performing of this pranayam will help in quenching your thirst.

- **Repetitions :**

In summer more than 24 repetitions can be performed. In winter this pranayam should be performed for the sake of practice.





## 3

**Bandh**

Many types of Bandh are used during the practice of various pranayams. With the help of this bandh yogis awaken the latent 'kundalini' energy through combination of Pran and Apan. Bandh is such a yogic process in which any one part of the body firmly contracted is bound through muscles and it affects the nervous system. So Bandh is a neuromuscular effort. Practice of Bandh can be done independently and also as a part of Pranayam and Mudra.

Three bandhas are included in Tribandh, which are as follows :

- (1) Mul Bandh.
- (2) Uddiyan Bandh
- (3) Jalandhar Bandh.

**(1) Mulbandh**

The word Mul is used here for the excreta passage. In this bandh muscles of the excreta passage are contracted and thus closed. Hence it is called Mulbandh.

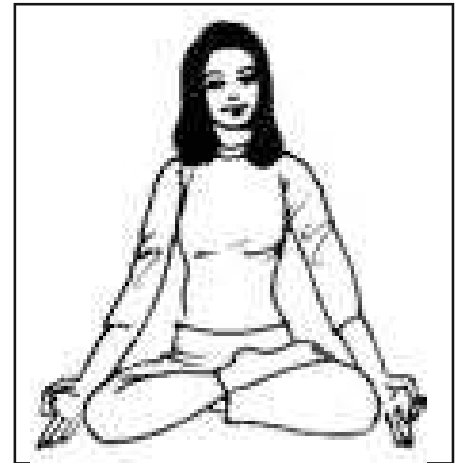
● **Method :**

- (1) Press the sivani with the heel of any one foot, i.e. if it is a right foot then press the sivani with the heel of the right foot, and keep the heel of the left foot on the root of the generative organ. (Sivani means a part inbetween anus and urine tract).
- (2) Then contract the anus. Then pull upwards the vertebral column (Spine) and try as if Apan gas is drawn upwards.
- (3) With this contraction Apan gas stops going downwards.

This bandh is known as mulbandh.

● **Benefists**

- (1) By performing this Bandh digestive capacity is enhanced. Constipation gets removed, and semen gets well-nourished.
- (2) While doing Mulbandh there occur necessary changes in hollowness of the stomach. So the coagulation of blood in the organs contained in hollowness is removed.
- (3) For sublimation of the Apan gas this bandh is the best activity.
- (4) Pranayam is easily achieved by doing it with this bandh.
- (5) The practice of this bandh is very much helpful in observing Brahmacharya (Celibacy).
- (6) It is said that, by performing this bandh frequently and continuously even an old man becomes young.
- (7) As said in the beginning Kundalini energy gets awakened.



**Mulband**

**(2) Uddiyan Bandh**

Pran in the body is sublimated through Uddiyan. So it is called Uddiyan bandh. For doing Uddiyan bandh empty your lungs firmly and forcefully. Then making use of the vaccum condition pull the gullet and navel back side, so that the stomach can last in the hollowness. This Bandh can be done in standing or sitting position, both ways.

● **Method:**

- (1) In standing position, put both hands firmly on thigh.
- (2) Bend your body a little ahead and detain your breath.

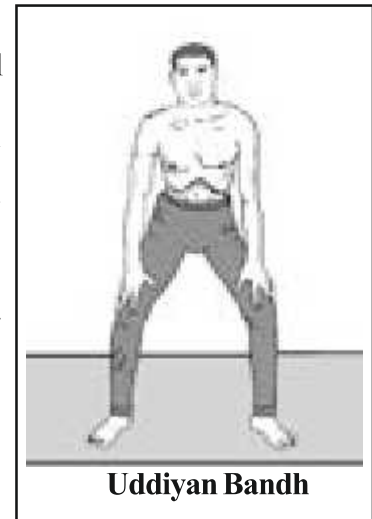
- (3) Keep a little distance between both the feet.
- (4) As stated above, breath out forcefully and empty your lungs, (Do external Kumbhak).
- (5) Then after contracting the stomach, pull the navel and intestine forcefully towards your back, so that the diaphragm will be raised high up and stomach wall would be pulled backside.

This activity can be repeated six times at certain intervals.

This activity can be performed by sitting in siddhasan, sukhasan or padmasan posture.

● **Benefits:**

- (1) This bandh makes digestion efficient and constipation is removed.
- (2) Organs of stomach like liver, intestine, spleen, pancreas etc. become efficient and it removes their weakness.
- (3) The bandh is very useful in case of illness due to hernia.
- (4) The regular practice of this bandh spreads energy in the body.
- (5) Doing this bandh makes the body healthy.
- (6) By practising uddhyan bandh regularly youth stage for long period is attained.
- (7) By doing this bandh pran joins with sushumana nadi (artery).
- (8) This bandh awakens kundalini power.



**(3) Jalandhar Bandh**

This bandh is called Jalandhar bandh in the name of yogi Jalandharnath.

● **Method:**

- (1) Sit in Sukhasan, Padmasan or Siddhasan.
- (2) Arrange both the hands on the knees holding gyan Mudra.
- (3) At first contract your neck and then bend your head ahead.
- (4) Press the chin on the chest firmly.
- (5) Detain your breath.

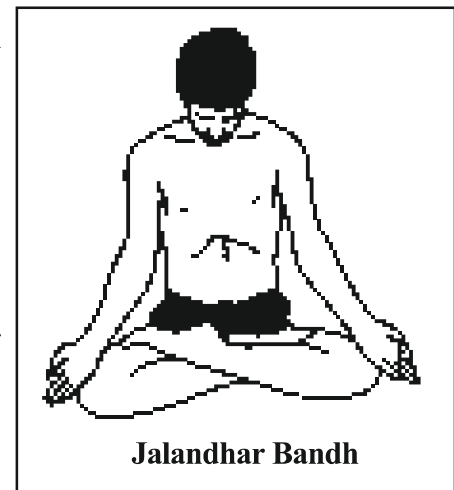
By doing this, centres of spinal cord and nerves are pulled upwards, and it affects the brain in that condition.

● **Benefits**

- (1) It affects strongly on thyroid and parathyroid glands which control hormones properly.
- (2) By doing this bandh, it gives much benefit in all diseases above the neck.
- (3) By practice of this bandh pran moves and goes in its proper path.
- (4) Kundalini power is sublimated.

● **Points to bear in mind :**

- I. Jalandharbandh is performed at the end of poorak and in the beginning of kumbhak.
- II. Antarik (Internal) kumbhak is performed at the end of poorak and bahyakumbhak (external) is done at the end of rechak.
- III. Beginner should perform this jalandhar bandh after doing proper practice (i.e. best practice).

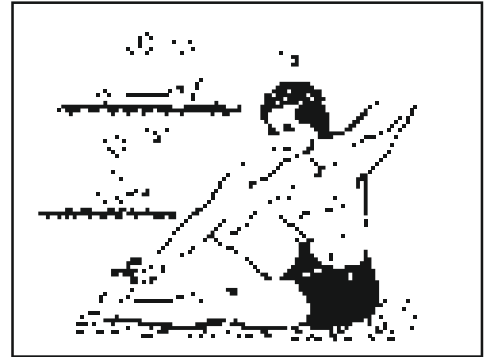


**1. Aakarna Dhanurasan**

This asana is to be performed in sitting position. In this asana the shape of the body becomes like the shape of drawing (pulling) the bow. Hence it is called Aakarna Dhanurasan.

- **Original Position :**

- (1) Keep both the legs straight.
- (2) Put knees touching the ground.
- (3) Keep heels and toes of both the feet joined.
- (4) Keep hands straight from elbow and in the side of both the legs.
- (5) Keep palms (of the hands) on the ground.
- (6) Keep fingers of hand joined with one another.
- (7) Keep upper part of the body from waist straight and loose.

**Aakarnadhanurasan**

- **Method :**

- (1) Hold toes of both the feet with index fingers (first fingers) and thumbs of both the hands.
- (2) Pull the same leg with any one hand. Pull the keep toe of the foot till it reaches near the ear.
- (3) There is another method of doing this Asana keep both the legs straight and hold them with tangled hands. Then pull the leg held by hand below upto ears.
- (4) Stay for about a minute in this position. Then come in the original position in reverse order.
- (5) In the same way hold this asana for the same time duration on the other side.

- **Points to bear in mind :**

- (1) Bring the leg held by hand slowly upto ear, don't make haste.
- (2) The stomach would be contracted and bent a little.

- **Benefits :**

- (1) Muscles of the whole body get good pulling with this asana.
- (2) Flexibility of the body increases.
- (3) It is useful in lessening fatigue of the body.

**2. Ushtrasana**

This asana is to be done in sitting position. Ushra means camel. In complete state of this asana the shape of the body resembles to the shape of the camel to some extent. Hence it is called ushtrasana.

- **Original Position :**

- (1) Keep both the legs straight.
- (2) Put knees touching the ground.
- (3) Keep heels and toes of both the legs joined.
- (4) Keep hands straight from the elbow and in the side of both the legs.
- (5) Put palms (of the hands) on the ground.

**Ushtrasana**

- (6) Keep fingers of the hand joined with one another.
- (7) Keep upper part of the body from waist straight and loose.

● **Method :**

- (1) At first hold Vajrasana.
- (2) Keep the distance of about one foot between both the knees, keep distance of about four inches between toes of both the legs.
- (3) Stretch both the hands from behind, hold the ankles of both the legs firmly.
- (4) Stretch thigh, stomach and chest forward and bend the head backside. The body from the knee to the head would remain bent like a spring.
- (5) Remain in this position according to one's strength. Then come in the original position in reverse order.

● **Points to bear in mind :**

- (1) Draw out the stomach and the chest as far as possible. Bend the head backside as much as possible, so that enough bending is done to the body.
- (2) Continue breathing with normal speed.
- (3) Don't stay in this asana for long. Repeat this for three to five times.

● **Benefits :**

- (1) Spine remains flexible, healthy and efficient.
- (2) Constipation and indigestion get removed.
- (3) Respiration - efficiency increases. The liver, spleen and pancreas remain healthy and efficient.
- (4) Unessential fat of the body gets removed.

### 3. Lolasana

This asana is to be done in sitting position. When the body comes in the complete position of this asana, it can swing like a pendulum of the clock. Hence it is called "Lolasana". In this asana, it is required to lift the body with the help of hand in Padmasana position. Hence it is called utthit Padmasana.

● **Original Position :**

- (1) First of all, sit extend both the legs straight.
- (2) Put your hands in the side of thigh.
- (3) Make the spine a little straight.

● **Method :**

- (1) First of all sit in Padmasana. Keep both the hands outside the thigh. Arrange such that the palms lie on the ground and fingers in the opposite direction.
- (2) Keep the body as high up as possible with the strength of hands. Be in this position for some time.



Lolasana

(3) Bring down the body again slowly and come in the original position.

● **Points to bear in mind :**

(1) In the complete position of asana, keep the neck and sight straight.

● **Benefits :**

(2) Organs like arms, chest etc. develop completely. Muscles of the arms become strong.

(3) You get rid of idleness and negligence. Organs of the respiratory system are nourished and become more active.

#### 4. Garbhasana

This asana is to be done in sitting position. The form of this asana is just like a child in the embryo. Hence, it is called Garbhasana.

● **Original Position :**

(1) First of all sit extending the legs straight.

(2) Put hands on the side of the thigh.

(3) Make the spine straight (erect) a little.

● **Method :**

(1) At first hold padmasana.

(2) Draw out the right hand from the right calf (of leg) and thigh and the left hand from the left calf and thigh up to the elbow.

(3) First of all do Poorak. Then while doing Rechak hold the right ear - lobe with the right hand and left ear - lobe with the left hand.

(4) In this position be in normal breathing according to capacity.

(5) While doing Poorak, come again in the original position.

● **Points to bear in mind :**

(1) While doing this asana, take care that you do not tumble down.

● **Benefits :**

(1) Semen is saved and the mind becomes steady.

(2) Many disorders of the intestine get rid of.

(3) Fat on the thigh gets removed and the thigh becomes shapely.



**Garbhasana**

#### Pavanmuktasana

This asana is to be performed by supine (lying on back). Pavan means gas and mukta means released. This name of the asana shows that this asana removes unnecessary gas from the stomach and the intestine.

● **Original Position :**

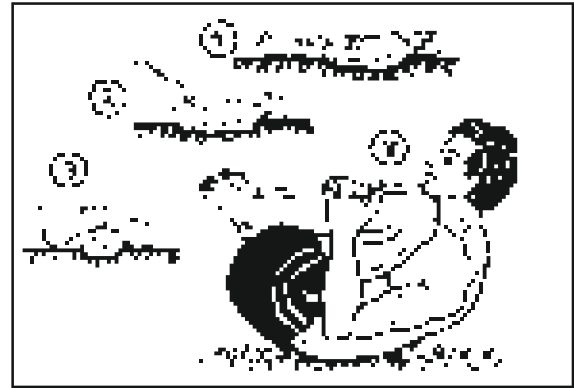
(1) While lying on the back, keep both the hands near knees / near thigh.

(2) Keep legs near to each other and palms touched to each other and straight from the knees.

(3) Keep palms open to sky.

● **Method :**

- (1) Bend legs from knee. Keep both the heels near the hip and knees in the direction of the sky.
- (2) While doing rechak, bring knees near the chest and press with the help of hands.
- (3) Raise the trunk (of the body) and the head and establish them inbetween the chin and knees. Perform bahya kumbhak after doing Rechak.
- (4) Heels should be in touch with the hip and pressure on the stomach is to be applied with the thigh.
- (5) In order to attain complete benefit of this asana do Rechak completely and try to remain in the bahyakumbhak as long as possible.
- (6) Come again in the original position slowly.



**Pawanmuktasana**

● **Points to bear in mind :**

- (1) It is essential to pay attention to Rechak in this asana. Do complete Rechak and Bahya (external) kumbhak also.
- (2) Don't do this asana while suffering from hernia, severe waist pain, and any injury to stomach.

● **Benefits :**

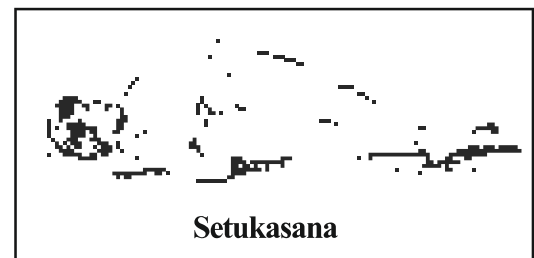
- (1) Constipation (of bowels) and gas get removed.
- (2) Disorders of digestive organs are removed and their capacity increases.
- (3) One gets rid of knees pain and ankle pain.
- (4) Waist ache and back - ache are removed.
- (5) Fat on the stomach decreases.

## 5. Setukasana

This asana is to be done lying on the back. In this asana the shape of the body becomes just like setu - bridge. Hence it is called Setukasana or Setubandhasana.

● **Original position :**

- (1) Keep both the hands near the knees lying on the back.
- (2) Keep legs near to each other, and palms touching each other and straight from knees.
- (3) Keep palms open to sky.



**Setukasana**

● **Method :**

- (1) Keep support with both the hands below waist. Upper - arm in between shoulder and elbow parallel to ground. Keep hands from elbow to wrist straight at right angle.
- (2) Keep support of hands below waist. Raise slowly back, waist, hip and both the legs from the ground. Don't bend knees keeps heels and palms on the ground, keep legs close to each other.
- (3) Thus the shape of the whole body becomes like setu (bridge). This is the last position of this asana.



● **Points to bear in mind :**

- (1) Beware while holding the waist with the help of palms of both the hands. Part of head and neck touch the ground.

● **Benefits :**

- (1) Practice of this asana gives exercise to the bones of following : Joints of bones of shoulders, joints of bones of elbows, and of wrist, fingers, the whole spine, bones of hip of the waist, bones of knees and ankles.
- (2) This asana is beneficial to patients of Osteoporosis.

### 6. Naukasana

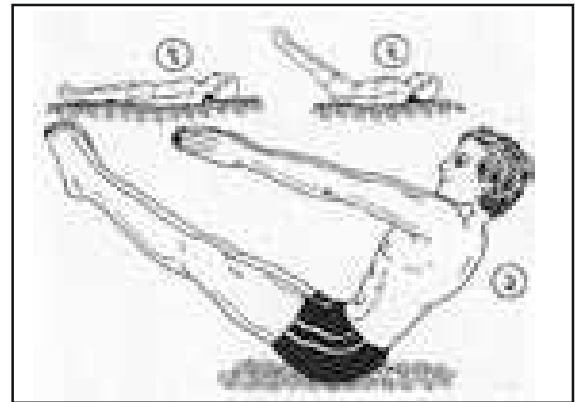
This asana is to be done lying on the back. In this asana the form of the body becomes like a boat (Nauka). Hence this asana is called naukasana.

● **Original Position :**

- (1) Lie down on back on a carpet (asana).
- (2) Keep hands aside.
- (3) Keep legs close to each other.
- (4) Release the body loose.

● **Method :**

- (1) Raise both the legs high, so that angle between ground and legs becomes  $45^\circ$ . Keep both the legs together. Take care that legs do not bend from knees.
- (2) In the same way raise the upper part of the body i.e. back, head and hands all together. Raise this part also high at an angle of  $45^\circ$ . Keep both the hands in the direction of legs. Keep your sight towards big toes of both the legs.
- (3) The whole body would be balanced by the support of the hip. This is the complete state of Naukasana.
- (4) Be in this position for some time. Then come to the original position in the reverse order.



**Naukasana**

● **Points to bear in mind :**

- (1) Don't give jerks while raising up the part of the body.
- (2) Take care that the body may not tremble while holding this asana.
- (3) In the beginning perform this asana for few seconds only. By increasing practice, it can be reached up to two minutes.
- (4) After maturity in practice hands, legs, back and head can be raised simultaneously.

● **Benefits :**

- (1) It keeps muscles and organs of the stomach healthy.
- (2) It increases balance - capacity of the body.
- (3) It decreases fat on stomach and hip.
- (4) It gives firmness and steadiness to the body.
- (5) It keeps the spine healthy and capable.

## 7. Chakrasana

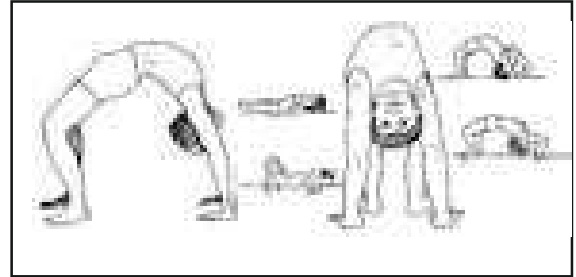
This asana is to be done lying on the back. In this asana the form of the body is just like a chakra (wheel of disc). Hence it is called chakrasana.

### ● Original position :

- (1) Keep both the hands near the knees lying on the back.
- (2) Keep legs near to each other and straight from knees.
- (3) Keep palms towards ground.

### ● Method :

- (1) At first while doing Poorak, keep feet touching the ground so that both the legs bend through knees in standing position.
- (2) Keep both the hands on back side of the head and palms towards ground.
- (3) Keep palms and legs firmly gripped with the ground and raise the body slowly from the waist.
- (4) Keep the head touching the ground.
- (5) Slowly raise the head also high up from the ground and keep your sight backside. Stay in Kumbhak according to capacity.
- (6) While performing Rechak come again in the original position slowly in the reverse order.



**Chakrasana**

### ● Points to bear in mind :

- (1) In this asana at the time of raising the body from the waist take care that hands and legs may not slip. Bring the waist downward slowly, take care not to collide.

### ● Benefits :

- (1) The spine gets a good exercise.
- (2) Indigestion or constipation gets removed.
- (3) Feeling of zeal and enthusiasm prevails in the body.
- (4) The posture becomes proper.

## 8. Bhujangasan

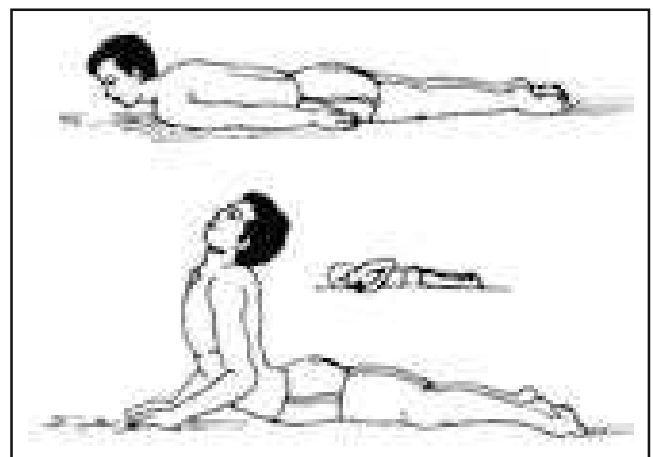
This asana is to be done lying on the stomach. Bhujang means serpent. In this asana, the shape of the body becomes like the shape of the serpent raising its hood. Hence it is called Bhujangasana.

### ● Original position :

- (1) Lie on stomach, both the hands on the side of thigh.
- (2) Keep palms touching the ground.
- (3) Keep palms close to each other.
- (4) Keep chin leant on ground.
- (5) Keep whole body straight.

### ● Method :

- (1) Keep palms near respective shoulders on the side of chest.
- (2) Keep palms and elbows touching the ground.



**Bhujangasan**



- (3) Raise the head, shoulder and chest from the ground to the navel while doing Poorak. This is a complete position. Stay in this position for some time.
- (4) Again put the head and the trunk on the ground while doing Rechak.
- (5) Come in the initial position.

● **Points to bear in mind :**

- (1) Students suffering from diseases like hernia, ulcers of stomach, hypo thyroidism, severe back ache, internal T. B. should not do this asana.
- (2) Women should not do this asana during menstruation period.
- (3) The patient with post operation of stomach should not do this for 2 - 3 months.

● **Benefits :**

- (1) Organs of the stomach get massaging and remain healthy.
- (2) Muscles of the neck become strong.
- (3) Troubles of urination get rid-of, and the waist becomes more flexible.
- (4) It gives relief in troubles like stomach - ache, sciatica - aching, vertebra - slip etc.
- (5) Women get relief in pain during menstruation period and irregularity of menstruation is removed.

### 9. Shalabhasan

This asana is to be done lying on the stomach. Shalabh means locust. In this asana the shape of the body becomes like shalabha, hence it is called shalabhasana.

● **Original position :**

- (1) Lie on the stomach.
- (2) Keep both the hands on the side of thigh.
- (3) Keep palms touching the ground.
- (4) Put legs close to each other.
- (5) Keep chin leant on the ground.
- (6) Whole body straight.

● **Method :**

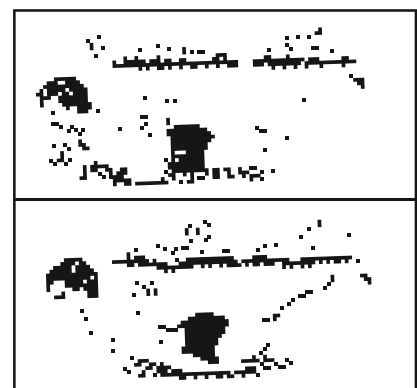
- (1) Do Poorak for long. Raise up both the legs simultaneously straight from the ground. For that, press your palms on the ground, and make use of hands as lever. This is the complete position of asana.
- (2) Stay in internal kumbhak according to capacity. Then bring down legs while doing Rechak.
- (3) Come in initial position.

● **Points to bear in mind :**

- (1) Bring your legs very slowly, while lifting both legs high and again keeping them down, see that there is no collision even a little.
- (2) Don't do this asana, if suffering from hernia, ulcers, high blood pressure, internal TB or any problem of heart, and severe waist ache.

● **Benefits :**

- (1) Troubles of stomach, constipation and gas are removed.



Shalabhasan

- (2) Liver, pancreas, kidney and Pituitary glands become strong.
- (3) Additional fat is removed and waist becomes thin and shapely.
- (4) The spine becomes strong and its nerves become efficient.
- (5) Piles are removed.

### 10. Garudasan

This asana is to be done in standing position. In this asana the shape of the body becomes like Garuda (eagle), hence it is called Garudasana.

#### ● Original position :

- (1) Keep both the legs together.
- (2) Keep both the hands straight, close to the body, sight straight - in front.
- (3) Keep fingers of hands touching the body.

#### ● Method :

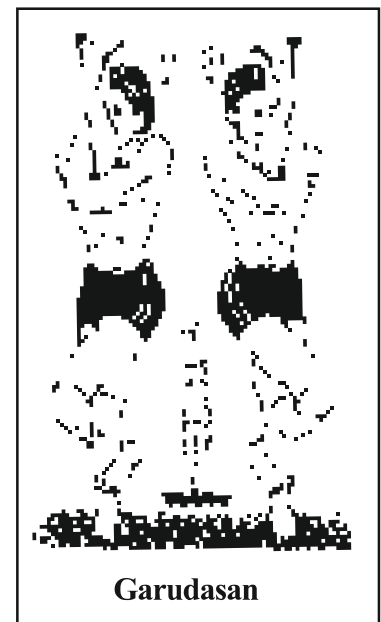
- (1) Let the right leg be on the ground as it is.
- (2) Hold the left leg high, and wrap the right leg on the front side. Left leg would be wrapped and close to right leg.
- (3) Raise both hands high in front and entrap both hands with each other in a knot. In this position keep both hands in front of the mouth.
- (4) This is the complete state of garudasana. Stay in this state as per capacity.
- (5) Come in the initial position in the reverse order.
- (6) Practise this asana on the other leg for the same time period.

#### ● Points to bear in mind :

- (1) Arrange hands and legs like this. That hand concerning the leg steady in the ground, may be arranged higher than the other hand, and then tangle the hand. When you perform this asana on the second leg arrangement of the hand would change.
- (2) Take care not to fall.

#### ● Benefits :

- (1) Legs and hands become strong.
- (2) Balance capacity of the body increases.
- (3) Practice of this asana in adolescence stage helps in increasing height.
- (4) Concentration increases. It helps in Dharana.
- (5) It helps in restraining the mind.

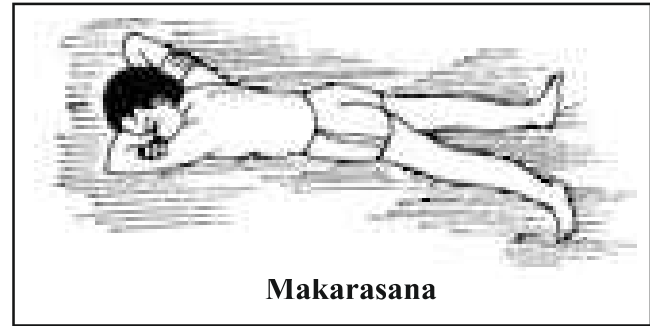


### 11. Makarasana

This asana is to be done in the position lying on the stomach “Makar” means “Magar” (Crocodile). When this asana is in the complete state, the body seems like a magar (crocodile).

● **Original position :**

- (1) Lie on stomach.
- (2) Keep both the hands in side of thigh.
- (3) Keep palms touching the ground.
- (4) Keep the legs touching each other.
- (5) Keep chin leant on ground, the body completely in erect postion.



● **Method :**

- (1) Keep a distance of a foot between both the legs. Keep heels inside, fingers and toes outside.
- (2) Keep both the hands one above the other below forehead.
- (3) Relax the body completely stress free, and lie down in the relaxed postion.

● **Points to bear in mind :**

- (1) Make respiration process very normal and natural.
- (2) Make the complete body loose and relax.
- (3) Make the mind quiet.
- (4) The person suffering from low B. P. and problem pertaining to heart should not do this asana.

● **Benefits :**

- (1) Physical fatigue is removed.
- (2) Intestines become active, due to which gas and constipation are removed.
- (3) Fat decreases.
- (4) It is beneficial to the patient of high B. P.
- (5) Mental stress and sleeplessness are removed.

**EXERCISE**

**1. Answer the following questions in detail.**

- (1) Explain the meaning of ushttrasana, its initial position, method and benefits.
- (2) Explain the meaning of Chakrasana, its initial position, points to bear in mind and benefits.
- (3) State the meaning of Garudasana, its initial position, method and benefits.
- (4) State the meaning of Shalabhasana, its initial position, method, points to bear in mind and benefits.
- (5) State the benefits of the following Asanas :

Akarndhanurasana, Garbhasana, Bhujangasana, Naukasana.

**2. Answer the following questions in short.**

- (1) State the meaning of Makarasana.
- (2) Describe the initial position of Lolasana.
- (3) State the benefits of Setukasana.
- (4) State the method of Pavanmuktasana.
- (5) State the names of any four asanas, to be done on supine position.

**3. Write answers to the following questions by selecting correct option from the options given below :**

- (1) What is the meaning of Bhujang from the following ?  
 (A) Bhujā (B) Hip (C) Serpent (D) Water.
- (2) How is Lolāsana to be performed ?  
 (A) Sitting position (B) Lying on the back  
 (C) Lying on the stomach (D) Standing Position.
- (3) Which āsana has the complete state like bridge ?  
 (A) Chakrasana (B) Garudasana (C) Garbhasana (D) Setukasana.
- (4) Which āsana removes gas from stomach ?  
 (A) Setukasana (B) Pavanmuktasana (C) Lolāsana (D) Ustrasana.
- (5) Which Āsana has the shape like that of a child in the embryo ?  
 (A) Akarnadhanurasana (B) Makarasana (C) Garbhasana (D) Lolāsana.
- (6) Which āsana is beneficial to the patients of Osteoporosis ?  
 (A) Lolāsana (B) Ustrasana (C) Chakrasana (D) Setukasana.
- (7) Which āsana is not beneficial for the patients of the Hernia ?  
 (A) Bhujangasan (B) Makarasana (C) Garudasana (D) Pavanmuktasana
- (8) Which āsana is useful for increasing height ?  
 (A) Bhujangasana (B) Shalabhasana (C) Garbhasana (D) Garudasana .
- (9) Which āsana has the shape of the body just like locust ?  
 (A) Garbhasana (B) Aakarnadhanurasan  
 (C) Shalabhasana (D) Ushtrasana.

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## 5

**Infectious and non - infectious diseases**

Infection is a well known word. A person suffering from disease comes in contact with another person, who becomes a prey of that disease. This is called infection. Diseases caused by bacteria, viruses and fungi can be infectious. Crores of germs and bacteria from the body of a diseased person reach bodies of other animals via some ways and cause disease in them. These bacteria enter human body through the medium of air or dust, through water, milk or food, through bites or stings of animals or insects, through personal contact or through respiration or excreta - urine of disease carrying persons and cause disease. When a disease is spread through bacteria from one animal to other animal we call that disease as infectious disease. When a large number of persons are attacked with infection of certain disease simultaneously, it is called epidemic, cold influenza (flu), Pneumonia,

Tuberculosis of lungs, Jaundice, Cholera, Typhoid, Whooping cough, Diphtheria, Measles, Influenza, Pneumonia Chicken - pox, Leprosy, AIDS, Guineaworm, Dysentery etc. are infectious disease.

**(1) Germs and Germs carrier :**

Germ is a very small living insect. Some of them come under animal kingdom, some come under plant kingdom. Insects enter the body, colonizes there and produce disease, they are called parasites. Germs enter the body, they cause malaria, plague, cholera. Germs of malaria come under animal kingdom, they are called protozoa, initial germs.

Bacteria are under plant kingdom. These virus are of different types. It flies from one place to another place, for example, fungi is a plant, it has very small string. When fungi freezes, after some days, it produces spores like few small drops. It flies in the air here and there. When it drops on food or on other things, fungi increases. Fungi anyhow enters the body, reproduces themselves, it makes man diseased. Some bacteria are useful to man, Milk is converted into curds due to bacteria, bacteria prepares alcohol in the flour of Dhokala. Alcohol is prepared from sugar with the help of bacteria.

**Bacteria of diseases enter the human body through the following ways :**

**(1) Through air :** Bacteria of some diseases enter the human body along with air and dust to the lungs, influenza (Flu), Bacteria of Tuberculosis, cough etc.

**(2) Through diet, food, water or milk :** Bacteria of some diseases enter human body through polluted water, or food e.g. bacteria of diseases like cholera, typhoid, dysentery, worms, jaundice etc.

**(3) Through direct contact :** Some bacteria enter directly or through contact. Such diseases are called contagious diseases e.g. diseases like scabies, ring worms, eczema, leprosy, small pox, measles, chicken pox, etc..

**(4) Through animals and insects :** Some bacteria do not directly enter human body. First they enter to other animals and through them they enter the human body. e.g. first the insects of Malaria are with Mosquitos, mosquitos bite us then they enter our body through skin, in the same way diseases are spread by fleas also. The rabies diseases spread by bite of rabid animal. Some bacteria stick to flies feet, wings or other parts, spread from one place to another and food is polluted.

**(5) Through rubbing of skin :** Skin works as coverage against bacteria entering into the body. Even then some times bacteria of diseases enter human body, through rubbing or cut of skin e.g. anthrax and tetanus diseases are spread in this way.

**(6) Through organs of generation :** Sexual diseases or secret diseases are contagious diseases entering from one body to another body through organs of generation e.g. Syphilis, Clamedia, Gonorrhea are diseases spread through sexual contact. Those are sexual diseases.

**(7) Through disease holders (carriers) :** Some men are such that bacteria of specific diseases are there in their bodies, but as they have got immunity to fight against such bacteria, the disease do not adhere to them, but if bacteria from their bodies enter bodies of others, then they can be diseased. Such persons are called carriers of diseases. In such a way when a man becomes free from certain disease, he is a carrier of bacteria for some days. Hence that disease can adhere to the other person. Diphtheria, typhoid etc. are spread through disease carriers.

### **Prevention of Infectious Disease :**

Closed place, houses with darkness and humidity, rotten fruits, food and vegetables are the production place of different types of bacteria. In this atmosphere, bacteria progress in geometrical progression. Bacteria increases like one to two, two to four, four to eight like that there will be innumerable production of bacteria in a very short period. Sunlight and open air destroy bacteria. So we should reside in well sunlit and well - ventilated open air residence. Such atmosphere control the bacteria and destroy them.

### **Types of diseases :**

Diseases can be classified into two types : (i) Infectious diseases (ii) Non - infectious diseases.

- (i) Infectious diseases :** As we have seen, if one person is suffering from diseases and the other person comes in contact with him and gets affected with that disease, then it is called infection. Disease caused by bacteria, viruses and fungi are infectious.
- (ii) Non - infectious diseases :** Physical or mental diseases caused by increase or decrease of inanimate factors (external or internal) congenital defects by accident etc. are called non - infectious diseases.

### **(2) Physical protection against infectious diseases**

Physical protection along with environmental health is another important step for protection against infectious diseases. Physical protection against infectious diseases can be had at two layers :

**(1) External protection :** Disease protection armour

**(2) Internal Protection :** Disease resistance armour

**i. Disease protection armour :** Generally most of the infectious diseases spread through carriers like water, food, air, flies, insects etc. If an armour is set up to stop contact between disease - causing bacteria and carriers spreading them, it is a first step of physical protection against infectious diseases.

**ii. Immunity :** Protection against disease of the diseased body depends on immunity. Immunity is basically of two kinds (1) Natural and (2) Acquired

### **(3) Natural Immunity :**

Many bacteria enter human body through air, food or water. When bacteria enter human body with diseases to the blood, white blood corpuscles, white cells in blood fight to destroy bacteria. These white cells surround the bacteria of diseases enter them in their body and destroy them. Antitoxins produced in blood do not allow the poison produced through bacteria to affect human body. The disease - resistance strength of human body is called natural immunity.

### **(4) Acquired Immunity :**

Once there happens small - pox, that did not happen again. The reason is the acquired immunity, so the bacteria do not succeed in human body. The blood gets the immunity to destroy the bacteria of small pox. So we do not suffer the disease. This is called acquired immunity. Immunity is developed by creating situation like mild infection artificially through vaccination in the body over and above infection or disease caused unknowingly. Do not wait for spreading infectious disease, the immunity vaccination should be taken to increase acquired immunity. This immunity is more important than natural immunity.



**(5) Regular health (medical) check-up to control diseases:**

Regular health check - up is necessary for controlling the diseases. Instead of post diagnosis, its prediagnosis is necessary for protecting and maintaining health. Early diagnosis and treatment brings good result for protection of diseases. Regular medical check up is essential for maintaining health. especially in case of non-infectious diseases regular medical check-up proves much beneficial.

The Government has made an arrangement for medical check- up and diagnosis. The health - cards of children are prepared and maintained. The facilities are provided to children in the school for diagnosis of general disease, necessary medicine, if essential, vaccination etc. If it is necessary to admit the child in hospital for some diseases, parents are informed accordingly and necessary arrangements are made.

Defective eye sight is found, but diagnosis has not been done, in that case the parents do not give him necessary treatment or there is a defect caused during school period. Early diagnosis brings good result of the treatment for eyesight, paleness in blood, defect of vitamin A, defect of teeth, defect in ear, anemia etc.

Importance of regular health check-up increases tremendously in diseases like high blood pressure, diabetes, diseases of heart or cancer found in adults and senior citizens, because some diseases are found going out of control in the body without giving physical troubles as such, and when physical trouble / complaints arise, till then they would have done much harm. Such hidden diseases can be diagnosed early through regular health check-up. Its treatment then brings good results.

**(6) Vaccination programme and booster dose**

Immunity has not sufficient capacity to over come and the diseases always. Some bacteria create powerful poison and the healthy person comes under the effect of diseases. For the resistance from the bacteria, the immunity power should be increased. So insects of special disease brought up through artificial treatment and will be converted in passive. Vaccine contains dead bacteria and posion thereof. Vaccine is injected in human body. This is called to put vaccine or inoculation. After vaccination, white cells of blood attack on dead insects, so the white cells are habituated to fight against bacteria, insect and antitoxin is created. Such person gets immunity power to fight against disease. But vaccine is not available for each and every disease. Vaccination programme has been launched through health department for six major diseases in our country. This vaccine is given to the child up to one year from its birth, but some of the vaccines are to be given even after one year. This additional dose is called the booster dose. Moreover the mother is also given vaccine during pregnancy also under the national vaccination programme. The details regarding the name of vaccine, protection against which disease etc. are given here in the following table :

**Vaccination in children**

Sr. No.	Name of Vaccine	Protection against which disease	When to give	How to give
1	B. C. G.	T. B.	On the second day after birth or after half month	Injection
2	DPT Triple Vaccine	Diphtheria, whooping cough and Tetanus.	- First dose at one and half month -Second dose at two and half months, -Third dose at three and half months	Injection
3	OPV	Polio	After birth on 2nd day and along with DTP three doses.	Two drops inmouth.
4	Small pox measles	Small pox measles	At Nine months	Injection.

**Booster Dose****First booster dose**

DPT (Triple vaccine)	Diphtheria whooping cough and Tetanus.	Age of one and half to two years	Injection
OPV	Polio	Age of one and half to two years	Two drops in mouth

**Second booster dose**

DT (Double vaccine)	Diphtheria Tetanus	At the age of 5-6 years	Injection.
OPV	Polio	At the age of 5-6 years	Two drops in month.

**Third booster dose**

TT (Tetanus)	Tetanus	10 to 16 years	Injection.
<b>Vaccination to the pregnant mother</b>			
TT (Tetanus)	Tetanus	After 16 weeks of pregnancy.	Injection
TT (booster After a month of dose of Tetanus)	Injection.	the first dose.	to two years

In the second half of the last century up to 1970-75, vaccine of small pox was being given, but we could abolish not only the disease but also its disease causing bacteria from this earth through effective vaccine and vaccination throughout the whole world, and thus made a history.

In the same way intensive efforts are being made to abolish the disease polio and its disease causing bacteria through universal vaccination. At present we have reached very near to that target of achievement. Once again very quickly we would be able to make history of abolishing this polio through its additional vaccination dose.

**Death rate of India - at present time :**

There is a good repose of national health programmes of the government of India. People also have become vigilant for health improvement. We succeed to decrease death rate, due to control over the infectious diseases, remedy of the protection on the seasonal spreading disease and modern health technology. The Government of India started Prime Minister health protection scheme in Five year plan. Six centers have been already started at state level on the level of all India Institute of Medical sciences (AIMS), New Delhi. There is also a scheme of upgrading the centres to AIMS level and will be given central status.

**The Death rate in India**

<b>Year</b>	2001	2002	2003	2004	2005	2006
Percent of Death Rate	8.74%	6.62%	8.49%	8.34%	8.28%	8.18%
<b>Year</b>	2007	2008	2009	2010	2011	2012
Percent of Death Rate	6.58%	6.40%	8.23%	7.53%	7.48%	7.43%

It is clear that an average death rate in 2001 to 2005 period was 8.1%, that decreased in 2006 to 2010, and become 6.98%. In 2011-2012 this rate was average 7.45 %.



**(7) National Health Programmes :**

National health programmes are planned for the control of the problem of health which is wide spread and that has effect on large mass of the nation. Its main objective is to prevent infectious diseases and to establish control on them. People's health will be improved and they become fit for excellent living. Objectives and working of some important national health programmes is shown below in brief :

**(1) Reproduction - Child Health Programme :**

- **Objectives :**

- ❖ To protect and promote health of children as well as mother.
- ❖ To improve reproduction - health as a part of which family - welfare and population control can be achieved.

- **Functions :**

This programme is a group of many programmes. Efforts are made to achieve the above objectives by co-ordinating all the programmes related to child-health, mother - health and reproduction - health under this programme. Functions of this programme are as under

- (1) Vaccination.
- (2) Co-ordinated child development scheme.
- (3) Gastro - enteritis control programme.
- (4) Programme of controlling respiratory diseases.
- (5) Family welfare programme.
- (6) Deficiency of Vitamin A control - programme.
- (7) Anaemia control programme.
- (8) Treatment of infections of reproductive system and control programme.
- (9) Care of pregnancy and remedial measure.

**(2) Improved national TB control programme**

- **Objectives :**

- ❖ To reduce number of TB patients.
- ❖ To stop new cases of TB.

- **Functioning**

Treatment has been made available through diagnosis of TB and DOT (Directly observed treatment) dots centers with the help of microscope check-up at many places in the whole country. Every patient is made to take medicine (under direct care of the worker) so that he can recover by taking full dose.

**(3) National malaria control programme :**

7.5 crores people were suffering from malaria at independence time. Eight lakh people died every year due to this disease. National Malaria Control Programmes were started in 1953. It was converted in National malaria destroy programme in 1958, we succeeded. Malaria infected patients decreased in

1965-66 and number was one lakh. Malaria destroy programme was joined with primary health programme in 1997. Spreading method of pesticizer was changed. Now the pesiticizers were sprayed there where there are two or more patients per thousand population exist. Due to this there is decrease in malaria patients. Greater malaria control programme (GMCP) was started in 1997.

National germs - produced (vector born) diseases control programme has been launched by expanding the area of work of this programme.

● **Objectives :**

- ❖ To prevent the spreading of diseases like malaria, dangue and elephantiasis (Filariasis) spread through mosquitoes.
- ❖ To control the proportion of such diseases.

● **Functioning :**

- (1) To abolish the breeding places of mosquitoes
- (2) To render treatment through immediate diagnosis
- (3) To sprinkle insecticides for killing of mosquitoes.

**(4) National AIDS Control Programme :**

To prevent the spread of AIDS, the Government had started National AIDS Control Programme in April, 1992. NSP programme had worked upto 1993. The second phase, NACP-2 was started from April, 1999. This phase has two objectives (1) To prevent the spread of HIV and (2) To empower the Central and State Government with more efficiency to fight against HIV / AIDS. This programme has been decentralized at state and central administrative territories. The AIDS control society has been started at each state level. That plans a suitable scheme as per local necessity, and execute properly.

● **Objectives :**

- ❖ To prevent the spread of HIV - AIDS in India.
- ❖ To give treatment and help to the person affected with HIV - AIDS.

**Functioning :** To give proper and enough understanding regarding HIV - AIDS to get protection from it. To encourage and help people having risky sexual behavior to develop safe sexual behavior. To plan for making HIV free blood available.

**Health Policy :** The government of India had declared new national health policy in 2002, regarding health programme, in this scheme, more weightage is given to the field of medical research. The expenditure amount had increased double at government and private sectors up to 2010. In this policy, at the health sector the expenditure increases 8% at the GDP level up to 2010. The provision of 38 percent in health field medical expenditure is included, The provision of expenditure is increased up to 55 percent.

**(8) Role of students and community in National Health Programme :**

If students and people participate in National Health Programme, the programme will succeed and healthy environment will be created. To prevent this disease, people awarness and people efforts are very important forces.

Prevention of diseases can be achieved only by people participation and cooperation. i.e. malaria spreads through mosquitoes. If mosquitoes increase, the disease spreads rapidly. Mosquitoes which spread malaria, get produced in houses, schools, public places where there is water stored roundabout. If we have to stop malaria disease, we must destroy the malaria producing chains like bacteria. Students, youth and people should be educated and train to remove. The mosquitoes from house to house and should find out breeding places of mosquitoes and abolish them, we should do co-operative efforts. We can control the malaria with the help of youths and students.

#### **(9) Primary Health Protection :**

Primary health services means necessary services which are related to health made available in the vicinity of houses. Primary health protection system includes not only treatment of widespread disease, but also allround services for protection, promotion of health of people of that area and prevention and control of diseases.

National programmes as shown above are a part of primary health protection. Primary health protection is provided through health organization established in the country. The government has started emergency services like 108 KILKILAT Joyoas noise, children's laughter.

#### **(10) Village and Urban Health Organization.**

##### **Village health organization :**

Basic facilities of required number of doctors and experts. Facilities affecting health like safe drinking water, drainage, toilet arrangement, roads, electricity etc. are found less as compared to those in cities. Hence village health protection organisation has been established in order to make available basic services of health and services affecting health.

Primary Health centre is the unit of this organization. There is a primary health centre with one doctor and his team available for population of about thirty thousand. Under this health centre five to six sub - centres - as per the norm sub - centres for population of five to six thousand are established. Primary health centre is connected with community health centre and district hospital for intensive services.

##### **Urban Health Organization :**

##### **Functioning**

- Basic function: Treatment of ill person.
- Vaccination and family welfare function in slum areas of that particular area.
- Cleanliness of the area and proper dumping of waste.

##### **Urban hospital :**

**Functioning :** Expert and basic medical service facility of treatment like operation and to admit the patient. Health protection arrangement has been made in all India with the help of two health organizations as shown above.

If you study attentively the pictorial health organization shown here, you would be able to understand the health organization right from the village level to the national level. Broadly there are three major partners in health organization. (1) Government (2) Institutions with spirit of service. (3) Private institutions.

## Village, Town, District, State and National Level Health organization

National level	State level	District level	Nagar Taluka	Big Village	Small Village
<p>National level private Medical Institutions</p> <p>Health and Family Welfare Ministry</p> <p>Health policy programme Act Formulation</p> <p>National Level Govt. Medical Research Institute, Laboratory etc.</p> <p>National level Medical Health Institutions with spirit of service</p>	<p>State level private expert - hospital laboratory</p> <p>State Health and Family Welfare Department National Health Prog., Policy Implementation of Act : Supervision : Guidance</p> <p>State Level Government Hospital, Laboratory, Institutions, Research Training Institution etc.</p> <p>State level Medical Health Institutions with spirit of service</p>	<p>District level private medical hospitals, clinics, laboratory</p> <p>District level government Hospital, hospital medical and health institutions</p> <p>District level Hospital Institutions with spirit of service</p>	<p>Nagar / taluka level private Medical Hospitals, clinics, Laboratory</p> <p>Nagar / Taluka level government clinic community, Health centres and other health facilities</p> <p>Nagar / Taluka level hospitals, health institution with spirit of service</p>	<p>Big village level private clinics</p> <p>Big village level primary health centres and other health facilities</p> <p>Big village level clinics, health institutions, with spirit of service</p>	<p>Small village level private clinic</p> <p>Small village level sub centres and health programmes Angan wadi etc. Health facilities.</p> <p>Small village level Health institutions with spirit of service</p>

**Exercise****1. Answer the following questions in detail.**

- (1) How are the bacteria of diseases enter into human body ?
- (2) What made reduction in death-rate ?
- (3) State the objectives and functions of reproduction - child health programme.
- (4) State the objectives and functions of National Malaria control programme.
- (5) State the objectives and functions of National AIDS control programme.

**2. Write short notes:**

- (1) Germs.
- (2) Acquired immunity.
- (3) Vaccination.
- (4) National TB control programme.

**3. Answer the following questions in one sentence : :**

- (1) What is meant by "to be infected" ?
- (2) State the types of germs.
- (3) What is a parasite insect ?
- (4) Give name of one disease that spreads through air.
- (5) Give name of one disease that spreads through direct contact.

**4. Write answers to the following questions by selecting correct option from the options given below :**

- (1) Which disease spreads through direct contact ?  
 (A) TB                      (B) Scabies              (C) Malaria              (D) Dysentery.
- (2) What is called infectious disease ?  
 (A) Diseases spread through water.              (B) Diseases spread through air.  
 (C) Diseases spread through one animal to other animal.  
 (D) Diseases spread through pollution.
- (3) Which disease is spread through air ?  
 (A) Typhoid              (B) Influenza              (C) Eczema              (D) Anthrax
- (4) Which vaccine is given to prevent TB ?  
 (A) D. P. T.              (B) O. P. V.              (C) Small Pox              (D) B. C. G.
- (5) Bacteria of which disease enters into human body through rubbing of skin ?  
 (A) Tetanus              (B) Malaria              (C) AIDS              (D) TB.
- (6) Which vaccine is given to prevent polio ?  
 (A) B. C. C.              (B) O. P. V.              (C) T. T.              (D) D. P. T.

- (7) Why is pulse polio vaccine given ?
- (A) Protection against tetanus. (B) Protection against polio.  
(C) Protection against small pox. (D) Protection against diphtheria
- (8) Which programme is started to reduce death rate ?
- (A) Prime minister health protection programme.  
(B) Chief minister health protection programme.  
(C) Health minister health protection programme.  
(D) Death rate prevention programme.
- (9) Which check - up is necessary to control the diseases ?
- (A) Regular health check - up. (B) Check - up of blood.  
(C) Check - up of lungs. (D) Check - up of heart.
- (10) Diseases are classified in how many types ?
- (A) One (B) Two (C) Three (D) Four.

\*\*\*

## 6

**Approved Therapeutic Methods**

In olden age, the human beings used to live in jungles. For their food, they used to hunt animals. We know these facts, but in those days how they were suffering from the diseases and how the treatment was given is not known to us. We do not have any specific information about this. But we know that, before thousands of years Ayurvedik treatment was given. Because of this treatment Ayurved is considered as fifth Ved. But we know that, with the development of science, other treatments or therapeutic methods have been found by the respective resarches. Now, here we shall get information regarding the approved therapetutic methods in which the specilization degrees are awarded. They are as follows.

- (1) Ayurved
- (2) Yogopchar
- (3) Homeopathy
- (4) Naturopathy
- (5) Yunani treatment (Therapy)
- (6) Allopathy

**(1) Ayurved :**

About 5000 years ago, our saints and sages had found out Ayurvedic therapeutic method. According to Ayurved, when there is imbalance between Vat, Pitta and cough in our body i.e. when their percentage is increased or decreased, any disease develops. In Ayurved these three are considered as faults. When these three faults become defective the diseases develop. Defective gas develops about 80 diseases, defective acidity develops about 60 diseases and defective cough develops about 40 diseases. To destory the defects of these diseases, the therapeutic treatment is there in Ayurved. Ayurved therapeutic methods are proved unfailling positively effective for old cold, old fever, soriasis and skin diseases.

The reasons for having the Ayurvedic method the self sufficient one are as follows:

- (i) It is a natural therapeutic method.
- (ii) Removes the disease from its root and does not allow to develop again.
- (iii) It is a complete innocent therapeutic method without any side - effect.
- (iv) It observes the disease and the diseased person completely.

**Types of therapy**

There are two types of Ayurved therapy.

- (i) Shodhan and (ii) Shaman

Shodhan consists upon Panchkarm in which Vaman, Virechan, Basti, Nasya and Raktamokshan are included. In Shaman Snehan and Swedan are main pre-actions. By means of Snehan-Swedana the defects are diverted towards the Koshhta. From Koshhta they are thrown out by means of Vaman and Virechan.

**Pareji (Control) in Ayurved**

In Ayurved, along with the medicine, what should be taken according to the acceptance of the body, what should not be taken, what should be done and what should not be done etc. morally sound conduct and proper food and merriment have been thought of in the best way. Most of the diseases get rid- of, only because of observing and adopting the beneficial and avoiding injurious to the health food habits.



**(2) Yogopchar**

The steps of Yogopchar are as follows :

- (i) Brahmacharya (celibacy)
- (ii) Asana and Mudra
- (iii) Pranayam
- (iv) Upvas (Fasting)
- (v) Sadvichar (Morally good thoughts)
- (vi) Sadachar (Morally good conduct)

**(i) Brahmcharya (Celibacy)**

Brahmacharya is the base of Yogopchar. Enjoying sexuality in the disease condition brings physical and mental weakness. Hence, an individual who observes celibacy taking the shelter of yogopchar only can get rid of the disease. For the observation of Brahmacharya proper food and merriment, company and reading and also balanced way of life are very necessary.

**(ii) Asana and Mudra**

Asana and Mudra are very useful for the diseased, Yogi and Nirogi (healthy) persons. By means of Asanas the diseased organs can be made healthy, and also the mind can be kept in control. While doing asanas and Mudra the different centres in our mind become actively functioning and hence the natural health is obtained. Internally secreting glands become active, because of which the liveliness is created in the body and the mind becomes cheerful.

**(iii) Pranayam**

The base of Yog is Pranayam. Because of Pranayam, the lungs provide more oxygen and the blood becomes pure speedily. Because of Pranayam the body gets animated. The unsteadiness of mind and the dullness of the body goes off. Because of the purification of the blood the number of white corpuscles increases, which destroy the germs in the body.

**(iv) Fasting**

Willful fasting purifies the body instead of over eating and inviting the disease. It is the sign of intellect to eat little less than required and enjoy the healthy state of the body.

In the aim of fasting control over the mind, tyranny of senses, fasting, over eating, required balanced diet etc. are included in which purification of mind and body are main.

**(V) Sadvichar (Morally good thoughts)**

Bad thought is the seed of disease and good thought is the seed of health.

**(Vi) Sadachar (Morally good conduct)**

Sadachar means . ‘सत्’ + ‘आचार’. सत् pertains to God, where as ‘आचार’ pertains to behaviour. Hence sadachar makes an individual facing toward the God. Good thought is not created without good company and Sadachar is not created without good thoughts. The quality of good behaviour is Sattvagun (सत्त्वगुण) .

**(3) Homeopathy**

This method is based on the principle of curing naturally the diseased. The basic principle of this method is “like cures like”. This means that a diseased should be given the medicine of the symptoms of the disease. This method is prevalent based on the complaints of the patient. In this method the proportion of the medicine remains very meagre, The plus point of this medicine is that there is no side - effect.

**Basic Principles:**

- (i) “Like cures like” means the medicine having the same symptoms as those of the disease cures the patient.
- (ii) At a time only one type of medicine is to be given.
- (iii) The quantity (dose) of the medicine should be minimum. i.e. Medicine is to be given in very little dose.
- (iv) The effect of the medicine should be tested on a healthy person. The medicine prepared for human beings can not be tested on the animals, because the constitutions of the bodies of human beings and those of the animals are different.

**(4) Naturopathy :**

The treatment being done by means of the natural elements is called naturopathy, The important elements for this treatment are water, clay, light and the air. In this treatment external medicines, tablets, injections or the chemicals are not used of. Now, we shall get information regarding the following treatments making the use of natural elements.

- (i) Water Therapy
- (ii) Clay treatment
- (iii) Sun-light treatment
- (iv) Air treatment

**(i) Water therapy :** Water therapy means, the Therapy being given by various water experiments. Water has the tendency to catch up both the heat and the cold. When there is fever cold water piece of cloth is applied, which lessens the fever. Mostly such piece of cloth is put on the forehead of the patient. Such piece of water can also be put on the stomach.

When there is a sprain on the ankle of the leg or when there is swelling on any part of the body, hot water fomentation is given, which reduces the swelling. For this type of fomentation hot-water bag can be used filled with hot water. To reduce the swelling another method is of dipping the swelled part of the body alternately in hot and cold waters for the duration of one minute each.

Over and above vapour bath or steam bath, anima etc. experimental treatments also can be done.

**(ii) Clay treatments :** Clay gives cooling effect, absorbs the poison and reduces swelling, burning etc. Pond’s clay without sticky black mud or the clay of an ant hill (रुक्मिणी) should be dried in the sunshine, it should be cleaned and crushed and then should be sifted and it should be drenched. One should take care that there are no chemicals, dirt and unpleasant smell. Such drenched clay should be applied on the respective organ of the body, in thick layer. Such clay can be applied on the stomach, the inner part of the abdomen below the navel, over the eye lid and over the spine.

**(iii) Sun-light treatments :** Under the sun-light various insects can not harm us.

After sun-rise, if we stand under the sun-light for half an hour, it increases the lustre (तेज) of our eyes and the ultra-violet rays in the sun-light help us getting vitamin - D, which strengthen our bones.

If there is swelling on any part of our body and if that part is buried under the hot sand of the river, it reduces the swelling.

**(iv) Air treatment :** Air is an animate power (प्राण) of the human body. In its absence a man can not survive. Especially, the individuals having the troubles of lungs (weak lungs), should walk in the open air. They should keep the windows and the doors of their houses open to get enough air.

To increase the efficiency of filling more air in the lungs one should practise Bhramari Pranayam, Anunlom- Vilom Pranayam etc. Over and above one should inhale deeply and slowly. With- hold the breath in the lungs for few seconds and then exhale it slowly.

Over and above the treatments shown above one should observe fasting, should take balanced diet. Should perform light type of asanas and Pranayams. To observe morally good conducts of Yam-Niyam, should practise the relaxing actions and enough rest and sleep should be taken.

### **(5) Unani treatment (Theraphy)**

In Unani treatment the following four matters are important :

- (i) Dam (blood)- hot and moisturised
- (ii) Balgam - Cold and moisturised
- (iii) Safa - Yellow acidity, hot and dry.
- (iv) Sofa - black acidity : cold and dry.

If these four are in proper proportion, the individual is considered healthy. If there is some obstruction in the proportion. it creates the disease.

#### **Treatment : A**

- (i) By means of passing more urine.
- (ii) Giving turkis bath.
- (iii) By means of massage.
- (iv) By means of more motions or more vomitting.

**B: By means of food:** By means of giving fruit juices and different types of food.

#### **C: By means of Medicine**

- (i) The medicines prepared from the trees, fruits and flowers.
- (ii) The medicines prepared from the animals.
- (iii) The medicines prepared from salts.

The unani medicines give good results in the diseases like arthritis, lukoderma, Jaundice, asthma etc.

### **(6) Allopathy**

In the modern time the allopathy therapeutic method has been accepted by all. Since it is based on logic and is transparent the whole world has universally accepted it as the scientific method. This method is widely in use. With new researches and the developments of the technology, new changes are incorporated in this method. It means, this method is ever changing based on scientific principles.

This method is most efficient to examine all the parts and the sub-parts of the body and for the treatement of the diseases developed in it. This method can join hand to hand with the prevealent time accepting re-searches and new technology based on experiences.

But the limitation of this modern method is that the medicines used in this method have side- effects. Second limitation is this that in few diseases this method gives very little relief. e.g. Eczema (ਅੜਝੜ), some skin direases and the cold can not be removed from their roots.

There are so many branches of this method. e.g. surgery, orthopaedic, cardiogy, anaesthesiology, neu- rology, gynecology, pathology, dentistry, ear-nose and throat branch (ENT), Physiotherapy etc. Some other branches regarding different diseases also are developed.

Here, the more prevalent treatments and theropeutic methods are listed. Some methods are less

prevalent and only limited persons make their use :

The methods are as follows :

- |                                 |                          |
|---------------------------------|--------------------------|
| (i) Acupressure and acupuncture | (ii) Magnet treatment    |
| (iii) Shivambu treatment method | (iv) Colour therapy      |
| (v) Touch therapy               | (vi) Aroma therapy       |
| (vii) Music therapy             | (viii) Hypnotism therapy |
| (ix) Laughter therapy           | (x) Reiky therapy        |

### **Prescribed and unprescribed Medicines**

The medicines which can not be sold without the prescription of a doctor are called prescribed medicines. Before using such medicines, one has to understand all the instructions of the doctor regarding the medicine. e.g. If the instructions are not taken in to consideration, it may lead to serious results. Hence such medicines can not be given without the prescription. Over and above the medicines can be sold as per the instructions and in the prescribed dose. In the cash-memo of such medicines, the information regarding the batch number must necessarily be written. Loose tablets can not be sold. The tablets are to be given in the prescribed number and properly packed.

Unprescribed medicines can be purchased from any medical store, like purchasing the house-hold things. A purchaser has to use these medicines for house-hold treatment. Even then, the best thing is that such medicines also should be purchased as per the advice of a doctor. Unfortunately the rules regarding the medicines are not observed. Even then, the medical store keepers easily give such medicines. They give loose tablets also. As a result, the condition harmful to the health is created. Hence the Government and the vigilant institutions should start intense movement and the people should be saved from such actions.

### **Addiction Medicines**

Medicines are to cure the disease. The medicines if taken in more than required proportion. it becomes harmful. Some medicines are such that a patient becomes addicted to it. An addicted man always takes such medicines in more quantity. At the end, the symptoms of bad effect are seen in the body of such a man. Some such medicines are as under :

#### **Intoxication or sleeping medicines**

Diazepam and such other medicines are given to an individual suffering from insomnia. Their use makes an individual addicted to it. Such medicines affect the nervous system. The long term effect decreases the efficiency of the mind.

#### **Cough Syrup**

In most of the cough syrups there is a medicine prepared from the opium. which suppresses the cough. The addiction of such medicines harm the mind.

#### **Pain killer (Analgesic) Medicines**

We see the addicted persons taking simple as well as acute analgesic medicines. Such acute medicines harm the stomach, kidneys and other organs of the body.

#### **Amphetamine**

This medicine is given to an individual to awaken him who suffers from excessive sleep. But this medicine harms the addicted one and it creates in him violent feelings instinct. Mental diseases like frustration, stress, anxiety etc. medicines are prone to addiction. Hence one should remain acquainted

with such medicines having addiction quality and should remain aloof from their long term use, so that he can be saved from its addiction from encircling grip.

### **The risks of the self using medicines and the medicines of the quacks.**

Even in simple house-hold treatment, some are proved harmful and ineffective e.g. to apply fomentation in all types of swellings. As a matter of fact, the swelling in any injury is because of the minute breaking of the internal capillaries in which blood comes out but it does not have any way to go outside the skin. Hence, the blood collects around the muscles under the skin, where swelling is seen. In such swelling, one should rub the ice over the swollen part of the body, which stops the bleeding outside. Giving fomentation immediately after the injury does not stop the bleeding. On the contrary the blood keeps on flowing and excessive swelling is occurs.

When there is a dog bite, sprinkling of chilly powder on the wound causes intolerable irritation. It will be of no use.

Some time the drugists are unknown to the hazards of particular medicines. Hence such medicines should not be purchased from him to avoid the possibility of occurring big difficulties. It has been noted that intake of aspirin some times creates the ulcer in the stomach and starts bleeding.

Some pain killer medicines have side effects of decreasing white blood cells, which in turn decreases the resistance power of the body.

### **Hazards of the medicines from quacks**

The unqualified quacks make much use of the modern medicines, in which there is possibility of great harm. e.g. antibiotic medicines and steroid medicines.

#### **Antibiotic Medicines**

When there is fever because of any infection or even without infection. unnecessary antibiotic medicines are given. Mostly such medicines are not at all necessary, some times their selection is wrong. Their proportion some times is also in more or less degree. The quack does not know as to how many times in a day the medicine is to be given. Once the antibiotic medicines are continued they should be continued for a specific period which the quack does not know.

#### **Steroid medicines**

Steroid medicine is very much powerful. It is to be used only in a specific serious illness e.g., allergic shock. Mostly it is widely used to reduce the fever or for better feeling of the patient. But it suppresses the symptoms of the disease and reduces or vanishes the resistance power (immunity). The internal secretion of the glands reduces. In critical conditions the body can not resist properly.

#### **Expiry of the date**

Manufacturing date of medicine and within what period it can be taken in use. i.e. manufacturing date and expiry date written on the wrapper of the medicine or either on the bottle or any package. The time limit can be one year or even more than that. If expiry date is over, that medicine can not be used, because the quality of that medicine gets reduced. Again, there is no mention as to what will be the side effect. In short, a medicine after the expiry date should not be used.

As a precaution, one should always read the expiry date at the time of purchasing it. By mistake if you



purchase it and when you go home and come to know that the expiry date is over, you should go to the drugist and give it back and should purchase the same medicine of which the expiry date is not over.

### **The harmful effects of tobacco and liquor**

Liquor and tobacco are the greatest enemies of the human beings of the present time. These two collectively harm the human beings so much that it is not done even by the nuclear bomb. Because of these two vices, an addicted person dies every after three minutes.

#### **Liquor**

In liquor there is ethyle alcohol element. In different types of liquors the proportion of this element is less to more. These elements make an individual addicted to it. Liquor makes great harm to an individual physically, mentally, socially and at family point of view.

There is a belief about the liquor that if taken in small quantity is advantageous is not correct. Once started taking it, its proportion goes on increasing. The liquor drunkard loses his mental balance. As a result the crimes like violence, rape etc. go on increasing.

The adverse effects of liquor are seen in the internal as well as and external organs.

### **The harmful effects of liquor**

- (1) There is decrease in memory power and concentration.
- (2) An individual becomes prone towards frustration, delirium, bad behaviour and violence.
- (3) The skin of the face becomes dry. There are wrinkles on the face,
- (4) There is difficulty in coagulation of blood.
- (5) Liver is damaged. The possibility of developing cancer increases.
- (6) There is tremors of the hand, numbness of the fingers and minute pain.
- (7) There is swelling in the digestive system, because of malnutrition. There is vomiting and indigestion.
- (8) Ulcers in the stomach.
- (9) Swelling on the pancreas.
- (10) Imbalance in the movements of the joints.
- (11) There is numbness in the thumb of a leg. Minute pain.
- (12) The defect is created in the re-productive system.

### **Tobacco**

The killing element nicotine in tobacco is responsible for addiction. The effects of addiction of tobacco are not seen immediately like those of liquor. After long time its killing effects are seen. That is why tobacco is called 'slow poison'.

Tobacco is taken in different forms. Beedi and cigarette in smoking form, gutka in the form of chewing and cleaning the teeth. But tobacco in any form has the capacity to be addicted to. It is dangerous for health.

### **The harmful effects of tobacco**

- (1) Foul smell in the mouth. The taste can not be enjoyed, because of the harm to the nerves.
- (2) There are ulcers in the mouth.



(3) The mouth becomes tight, some times it becomes so tight that it can not be opened to enter the food into it.

(4) The gums of the teeth become weak. Teeth get carious. Digestibility becomes weak.

(5) Lungs become weak. Breathing capacity decreases. There is possibility of developing cancer disease.

(6) Illness of heart increases. High B.P. increases. Artery becomes narrow and the diseases are developed speedily. The possibilities of the paralysis and gangrene are more.

(7) In pregnancy the embryo is affected adversely.

(8) Nervous system is slackened.

(9) Adverse effects are seen on all the organs.

(10) Life quality decreases.

(11) If there is someone near the cigarette smoker, the smoke enters in his breath of that one, which has adverse effects in some proportion, In the world every six seconds one individual dies because of the utilization of tobacco.

### **Health frame work at village, city, district, state and national levels**

#### **(1) Health frame-work at village level**

At village level the basic facilities of the health, strength of the doctors and experts and the facilities affecting the health like drinking safe water, gutter, latrine facility, roads, light etc. are less in comparison with cities.

For about thirty thousand population one primary health centre and one doctor along with his team are provided. Under primary health centre five to six sub-centres are provided keeping in mind five to six thousand population for each sub-centre. Primary health centres are connected with general health centre and district hospital for intensive services.

Over and above at this level selfless service health institutions and private medical dispensaries are also there.

#### **(2) Health frame work at city level**

At city level there are Government hospitals, general health centers and other health facilities. City health centres are providing treatments for basic illnesses, vaccination in hutments, family welfare works, area cleanliness and removal of the dirt.

In city hospital basic medical service, operation and admitting the patient in the hospital the treatment facilities are given by the experts.

Over and above there are hospital, with the spirit of service health institutions and private hospitals, medical dispensaries and laboratories also are there at this level.

#### **(3) Health frame work at district level**

There are district level hospitals, medical services and health institutions which provide all the services regarding health.

Over and above at district level hospitals with spirit of service health institutions, private medical dispensaries and the laboratories, which give services.

**(4) Health frame work at State level**

The health and family welfare department of the State organizes national health programme and gives guidelines regarding the implementations of policy and law and keep the supervision and give guidance at state level.

**(5) Health frame-work at national level**

At national level, the ministry of health and family welfare gives health policy programme and the services regarding the formulation of the laws. The government medical research institution provides laboratory services at this level.

Over and above the services of national level. Medical institutions with spirit of service and the services of private medical institutions also are available at this level.

**Institutions with spirit of service of health and health education**

Here we know that along with the government frame-work from the village to national level the institutions with spirit of service and private institutions also give their services regarding the health in different forms. The institutions with spirit of service are established by the individuals with spirit of service and selfless motive. These institutions do their work without taking any material profit in the activities of health. In Gujarat there are few such institutions. These institutions stay along with the people. They try to understand their problems. At a particular place if they find any deficiency, they go there and give the services. Some institutions work in the areas of treatments in the cities. Some institutions work at the village level, especially in the backward districts and talukas. Such institutes are work as supplement the health works done by the Government. They are as under.

- (1) **Bhansali trust** working in Banaskatha and Patan.
- (2) **Seva rural** working in Jhagadiya in Bharuch district.
- (3) **Anjali** working in Ranasan of Sabarkanatha.
- (4) **Anandi** working in Panchmahal.
- (5) **Seva, Chetna and Samvedna** working in Ahmedabad.

These institutions with spirit of service are like the light-house in health programmes.

These institutions are spreading their service light in the remote places, where no type of service is rendered. Such small institutions giving their services in the field of health are worth to be honoured.

**Exercise****1. Answer the following questions in one or two sentences :**

- (1) Explain Ayurved therapeutic method.
- (2) Explain the Naturopathy treatment method.
- (3) Explain Allopathy therapeutic method.
- (4) Give information regarding addiction medicines.
- (5) Write the harmful effects of liquor.
- (6) Write the harmful effects of Tobacco.
- (7) Give information regarding the health frame work at village level.

**2. Write answers in one or two sentences of the following questions :**

- (1) Explain Yogopchar.
- (2) Write the basic principles of homeopathy.
- (3) Explain water therapy in naturopathy.
- (4) Write the hazards of the medicine from quacks.
- (5) Explain about the expiry of date of medicine.
- (6) Give information regarding the health frame-work at state level.
- (7) Give the list of the institutions with spirit of service working in health education in Gujarat.

**3. Answer the following questions by selecting correct option from the options given below.**

- (1) Who had invented the Ayurvedic therapeutic method ?  
(A) Ayurvedacharya (B) Guru Dronacharya  
(C) Saints and sages (D) Yogacharya
- (2) What is called the expiry date of medicine ?  
(A) The date limit given by the doctor to take the medicine.  
(B) After completion of the medicine the date of the disease to get rid of.  
(C) The date after which, medicine cannot be used ?  
(D) Six months after the production of the medicine.
- (3) What is the name of the institution working in Ranasan of Sabarkantha with selfless service.  
(A) Anandi (B) Nijanandi (C) Anjali (D) Bhansali
- (4) How many levels are there for health frame -work ?  
(A) Three (B) Four (C) Five (D) Six
- (5) Which therapeutic method has side-effect ?  
(A) Ayurved (B) Yogopchar (C) Homoeopathy (D) Allopathy



The first case of AIDS was registered on 5th June 1981. The world was, then not aware of the seriousness of this disease, but its history shows that, in the beginning of the first half of 20th century many instances of the disease which is known today as AIDS were noticed. As the time passes on this disease goes on increasing by leaps and bounds. In the under developed and developing countries, its spread is much faster. In India also, it is being spread hazardingly and terribly. Due to the adverse effects of this disease on progress and development of the society, it has become a challenge for the whole mankind. For prevention of this disease, the Government, the social institutions and all others individually need to join the movement of co-operation. In the whole world, 1st December is being celebrated as “World AIDS Day”.

● **Definition of AIDS**

AIDS is spread due to the infection of Human Immune Deficiency virus to white blood corpuscles T - lymphocytes.

This type of virus destroy the immunity of human body. Hence many types of illnesses can be caused.

H - Human

I - Immuno Deficiency (producing defect in immunity)

V - Virus

A - Acquired

I - Immuno (in the immunity)

D - Deficiency (producing deficiencies)

S - Syndrome (Group of the characteristics of the disease.)

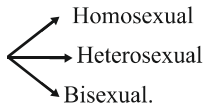
If in the blood - test of a person presence of these viruses is detected, that person is called HIV Positive. White blood corpuscles (WBC) protecting against diseases by providing immunity to the human body. But the viruses of this disease destroy the WBCs in the blood. HIV enters WBCs and attack the immunity system and make it weak. Thus they invite viruses of other diseases. After infected by HIV the time - duration of appearance of its characteristics can be from 6 months to 20 years. Such a person is known as bearer of AIDS and not a patient.

● **Definition :**

Group of diseases producing defect in the acquired immunity.

Entrance of HIV and AIDS in the body.

● **HIV, AIDS enter the body mainly in the following ways :**

- (1) Sexual intercourse with the person already infected : 
- (2) Mixing of the blood of the infected person with the blood of the healthy person.
- (3) By using the unsterilized needle already used by the infected person without being sterilized.
- (4) From the body of the infected mother to her child in embryo.
- (5) Collective use of the needle used by the infected person for taking intoxicants (intoxicating substances).

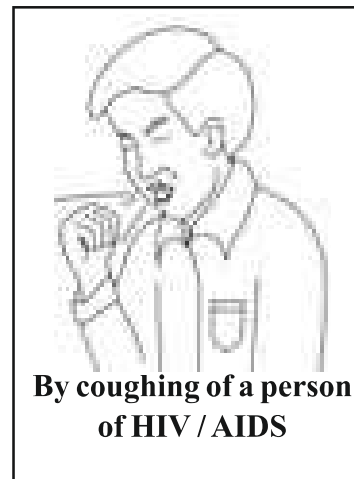
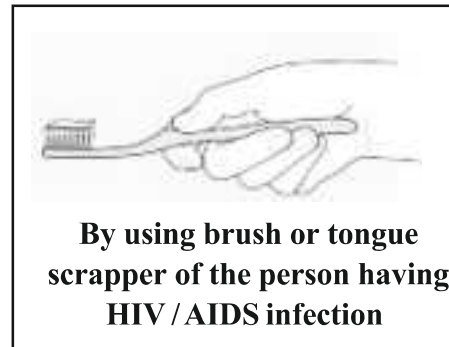
(6) The HIV viruses might have been mixed in the blade or needle. While shaving or setting 'tetu' made on the body.

In other infectious diseases medicines destroy bacteria, germs and thus it makes the person free from disease. But the medicines adverse to HIV viruses only stops the growth of these viruses, but they are not completely destroyed.

- **Patient of HIV infected / AIDS infected and society.**

There is no direct danger to the society from the patient of HIV or AIDS, infected because HIV present in his body does not spread in the other person, through the following social behavior.

**HIV / AIDS do not spread like this**



**With the HIV / AIDS infected person :**

- By staying in one house.
- Dining together.
- Using public latrines.
- By talking.
- By studying or playing together in the school.
- By donating blood with the sterilized needle.
- Embracing shaking hands or ordinary kissing.
- Using brush or tongue scraper.
- Taking bath together in the swimming pool.
- By travelling together in bus, train etc.
- Working together in the office or factory.

HIV / AIDS do not spread like such social behaviors as stated above.

● **Remedies to prevent HIV and AIDS :**

There is no remedy to uproot (destroy) HIV / AIDS completely, or no vaccine against it is still found. Hence the only remedy to save from it is in prevention of its spreading. Proper information regarding HIV and AIDS and to provide medicines at proper time is considered as the only remedy of saving.

Remedies to prevent HIV and AIDS :

- (1) Control sexual life.
- (2) Don't indulge in sexual relation before marriage or other than marriage.
- (3) Make use of condom at the time of sexual intercourse.
- (4) Don't take blood from professional blood donors.
- (5) Take blood from that person only declared HIV free through HIV testing.
- (6) Insist on the needle / syringe disposable or sterilized.
- (7) Use germfree instruments for any operation.
- (8) Don't make collective use of syringe with persons using intoxicant material.
- (9) Take care that the women having HIV infection does not become pregnant.
- (10) Insist on using things like razor, blade coming in contact with blood individually separate.

Healthy and hygienic life can be lived and enjoyed by keeping aside easily HIV / AIDS known as dangerous disease of this century by preventive measures for HIV / AIDS as stated above.

● **Unnatural sexual relation :**

There are mainly two types of sexual relations :

- (i) Natural sex relations.
- (ii) Unnatural sex relations.

**(i) Natural sex relations :**

The sexual relation undertaken with generative organs of woman and man physically is considered as natural sexual relation. Masturbation is a non - harmful and safe sexual activity. Discharge of semen in youths is natural. Due to that, neither any physical weakness, nor any disease is caused.

**(ii) Unnatural sex relations :**

Homosexual relation i.e. sexual relation between man - man and woman - woman is called unnatural sexual relation. Even between woman-man anus sexual intercourse is unnatural.

A person keeping such unnatural sexual relation gets his partner changed, then danger of AIDS - infection increases.

● **Intoxicating substances and HIV AIDS :**

In adolescence stage, sexual organs develop and it creates attraction for different sex, but social controls make hindrance. Hence they experience mental stress. For them this period proves to be critical. In this stage they are put in confused state. Due to sexual dissatisfaction they take shelter of intoxicating substances to get release from that dissatisfaction, and get caught in addiction to intoxicating substances. At last it carries them to the path of destruction - physical, mental and social i.e. in all the three areas.

Intoxicating substances are taken many a times through injection. Many persons in a group take such injections through only one needle and that too without sterilization. Even if one person only of this group has AIDS, then the whole group is entrapped in it. Hence danger of AIDS increases for persons taking intoxicating substances this way.



● **Information regarding sexual relations pertaining the age :**

Adolescence stage is such a stage in which young boys and girls have strong sexual attraction naturally. Due to lack of proper guidance children, young boys-girls any how get knowledge, half knowledge, ignorance, distorted knowledge, from improper source. As a result they have to suffer its evil result after long time. In exactly half instances out of total instances of HIV infection, the infection is caused in the age group 15 to 24 years. So in adolescence stage, when physical maturity is taking place, they should then get true sexual education. The defect can be removed mostly through sex education (sexual science education). Moreover in order to control dangerous disease like HIV / AIDS education of sex - relations is inevitable.

Having got true education, young boys and girls would be free from some wrong beliefs spread in the society, and they would come to know that sexual relations out of marriage and unnatural sexual relations harmful to the person as well as to society.

By imparting education about sexual relations at proper time and in a proper way healthy and balanced development of youngsters takes place and they stop being victims of disorder.

● **Sexual Health**

Care should be taken as follows for maintaining sex - health. (sexual health).

- (1) Take bath every day at least once with pure water.
- (2) Boys should cleanse white thick discharge collected on penis by lifting up the skin over it.
- (3) Girls should keep clean the private part while taking bath by opening external and internal os.
- (4) Girls, while washing urine-excreta - passage, should take care to clean by moving hand front to back. Due to lack of this care, girls get infection and complain about continuous vaginal discharge. This endangers their general physical health as well as health of reproduction system.
- (5) At the time of menstruation period, girls should take care of sex health. Sexual organs should be washed and cleansed with soap and water.
- (6) At the time of menstruation period cloth - pad or sanitary napkins used for absorbing discharge should be clean and they should be properly disposed of.
- (7) Underwear clothes should be of cotton and clean. Change them every day and clean them properly and then dry under heat of the sun.

**Some confusions regarding sex organs :**

In adolescence period youngsters are curious about topics pertaining to sexuality. These young boys - girls know somewhat about organs of the body, which they might have attained through friends, superfluous things, books read. Such knowledge is not scientific. As a result youngsters attaining such rubbish knowledge become victims of sexual disorders. Moreover, youngsters have many confusions due to wrong beliefs prevalent, about sexual organs. Wrong thoughts endanger their sexual health. Information regarding some of the confusions are as follows :

**(1) Confusions regarding fixed time and internal discharge at the time of menstruation :**

Physical development of every girl is not the same. Hence, there remains some difference of few days in menstruation period. Generally menstruation occurs during 28 days to 34 days. There may be difference of two three days, here and there. Days of menstruation discharge are generally three to five, some meager change may be. In the same way discharge may be also less or much more. i.e. in the case of discharge among girls some difference is common. In that case feeling that one is regular and well organized and the other defective need not prevail.

**(2) Semen - discharge in boys means waste of energy :**

Some illusions prevail in the society regarding semen-discharge. A drop of semen means hundred drops of blood'. This thing is quite unscientific and illusive. If semen does not flow out, it gets itself destroyed

in the body. Hence if there is no discharge, then it obviously wastes away and disposed of. Question of its collection and thereby strength - accumulation does not arise. In adolescence stage semen - discharge during sleep is very natural and non - harmful. It is not any sexual disorder.

### **(3) Confusions regarding size of sexual organs :**

There is no relation of any type between size of sexual organs and sexual capacity. Process of sexual relation and reproduction takes place with the same capacity even with sexual organs of any size - rather small or big.

### **(4) Masterbation is a harmless process. It does not create any type of weakness in the body :**

Masterbation is one type of copulation. In adolescence stage youngsters experience strong sexual force. In order to satisfy these sexual emotions youngsters take shelter of menstruation. Menstruation is one non-harmful and safe copulation process, through which youngsters are saved from infection of HIV / AIDS, as well as any sexual diseases. Menstruation neither causes any type of physical weakness nor any disease. Production of semen in the body occurs continuously. If it (semen) is not disposed of, it wastes away any how even during sleep. Thus through semen discharge it gets disposed of.

### **Exercise**

#### **1. Answer the following questions in one or two sentences :**

- (1) Give definition of AIDS.
- (2) What is meant by unnatural sexual relations ?
- (3) Why sexual education according to age should be imparted ?
- (4) State any two cares to be taken, regarding sexual health.
- (5) In adolescence boys semen - discharge means waste of energy - This is an illusion - belief - How ?

#### **2. Write shot notes :**

- (1) Ways of entrance of HIV AIDS into the body.
- (2) Activities not spreading HIV AIDS.
- (3) Remedies of preventing HIV AIDS.
- (4) Sexual Health.
- (5) Confusions regarding sexual organs.

#### **3. Answers the following questions by selecting correct option from the options given below :**

- (1) When was the first case of AIDS - disease registered ?  
 (A) 5th June, 1981                      (B) 5th June, 1982    (C) 15th June, 1981                      (D) 15th June, 1982
- (2) When is the 'World AIDS Day' celebrated ?  
 (A) 1st October                      (B) 1st November    (C) 1st December                      (D) 1 January.
- (3) In which age-group this infection of HIV is caused in exactly half instances of total instances ?  
 (A) 13 to 25 years                      (B) 14 to 25 years    (C) 14 to 24 years                      (D) 15 to 24 years.
- (4) Generally after how many days menstruation occurs in girls ?  
 (A) Twenty eight days to thirty one days.                      (B) Twenty eight days to thirty two days.  
 (C) Twenty eight days to thirty three days.                      (D) Twenty eight days to thirty four days.



**(1) Middle Distance Running**

Running is divided into three groups which are organised in 400 mtrs track - Short distance running, middle distance running and long distance running. Previously you studied short distance running. Now we will learn middle distance running.

Middle distance running includes 800 mtr and 1500 mtrs running. In 800 mtrs run competitors run two round whereas in 1500 mtrs, run he / she runs  $3\frac{3}{4}$  round, it means 3 full rounds and one three quarter round.

There is only one finish line for all the running events organized on the track. So that it is easy for judges who decide the winners and time keepers who take timing of the events, but starting lines are different in different runnings. On the track starting line of 800 mtrs run is near the finish line, whereas in 1500 mtr run starting line is near the second curve of the track which is known as curve starting line.

There are two methods of running in 800 mtr run (1) All competitors take standing start from the starting line. In this method all the competitors run all together. (2) In second method all the competitors run upto first curve in their own lanes and then they can go to the first lane.

To obtain a good result in 800 mts and 1500 mts run we will learn following skills in middle distance running.

- (1) Start.
- (2) Running style.
- (3) Position of the body.
- (4) Finish.

**(1) Start :** In 800 mtrs and 1500 mtrs run competitors take standing start. After start competitors run in any lane. As one has to run long distance and number of competitors are more, standing start is being taken. In standing start, competitor keeps his strong leg behind the starting line, both hands are kept bent from the elbow, the body is leaned forward and keeps body weight on the strong leg. Runner starts running on sound of clapper or pistol (starter will give first command of 'on your mark'. As soon as all competitors get ready behind the starting line starter will sound with clapper or pistol.

**(2) Running Style :** In middle distance running the starting strides are short, as the speed increases the strides become longer, at the similar speed, strides are also similar. In the end of running, strides will be longer and speedy. From the starting speedy strides are not advisable, because running distance is long so competitors may get tired. The speed should be increased according to one's efficiency. Competitors should cross the finish line with maximum speed.

**(3) Position of the body :** Co-ordination of different parts of the body like hands, legs and type of the track etc. are very important in completing of middle distance running.

**(a) Position of hands :** Both hands are bent from the elbows. According to law of pendulum, if hands are short, then motion will be more and if hands are long then motion will be slow. So keep elbows of both the hands bent. Motion of both arms will be forward - backward between the shoulder and waist.

**(b) Position of legs :** While running, movement of both the legs will be forward - backward and parallel to each other. When leg comes forward lift it in such a way that thigh of leg becomes parallel to the

ground and then leg should be forwarded straight and rhythm of hands and opposite leg should be maintained. Run all the time on toes.

**(c) Position of Trunk :** While running, angle of trunk will be approximately at  $25^\circ$ . Balance may be lost if you bend your body more forward and if you keep your body straight, it will obstruct your speed.

**(4) Finish :** The runner should cross the finish line with top speed. The runner has to decide the distance which he will cover at top speed after taking into consideration his remaining energy and endurance.

There are three types of finish (1) Run - through (2) Torso finish and (3) Shoulder finish. In middle distance running second type of finish is more comfortable. After crossing the finish line with top speed continue running for 8 to 10 strides more. Crossing the finish line with jump, taking long strides on bending more forward is harmful.

Any competitor during running wants to over take other runner, he may go from right side of that runner without touching or disturbing him/her. If runner runs inside the track or he / she tries to push or stop other runners to run he/she will be disqualified.

## (2) Relay Race

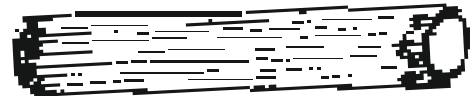
Generally competitions organized on the track are individual events. But relay races are held on track yet are team events. At the international level 4 x 100 mtrs and 4 x 400 mtrs relay races are organized on tracks for men and women. We will learn here 4 x 100 mtrs relay race.

**4 x 100 mtrs Relay Race :** In this relay race 4 players of one team will run 100 - 100 mtrs, by one alternatives and complete the 400 mtrs distance. During running baton is handed over to their partner in sequence. This relay race is very speedy and action of change of baton provides entertainment to spectators. In this relay run baton is used so it is also called baton relay race.

**Baton :** Baton shall be a smooth hollow tube circular in section, made of wood, metal or any other rigid material in one piece as shown in the figure. Each baton shall be numbered and of a different colour given to each team.

The length of baton shall be 28 to 30 cm.

The outside diameter shall be 1.2 cm to 1.3 cm and it shall not weigh less than 50 gms.



**Baton**

**Skills of Relay Race :** There are three types of skills in 4 x 100 mtrs relay (1) Start (2) Baton Exchange (3) Finish.

**(1) Start:** In relay race first runner among the team of four will take a start from behind the starting line. Crouch start is compulsory in this race. There are three types of crouch start (A) Bunch or bullet start (B) Medium Start (C) Elongated start. First runner Starter will use any of the above starts. Generally good runner selects any start according to his own height. i.e. bullet, medium or elongated start.

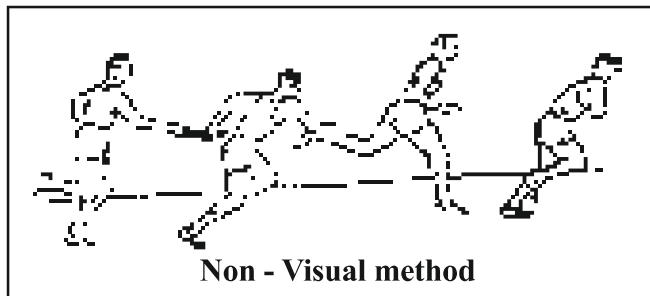
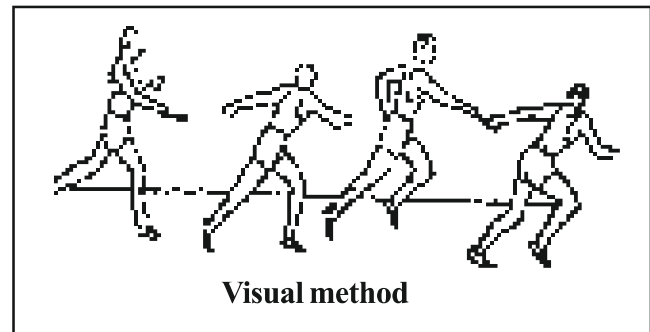
As soon as the command "on your marks" is heard, each runner places the toes of his strong leg on the starting block at a distance of 40 to 50 cm behind the starting line in his own lane, then he places toe of his free leg on the block according to bullet, Medium or elongated start in such a way that the toe touches the ground.

After that the runner shall hold the baton at the bottom with the palm of his left hand with the help of last three fingers, keeping thumb of left hand and first finger on reverse position "V". Front end of baton should not touch the ground, Where as fingers of right hand are together and thumb should be

separate making a " V " shape. Keep fingers and thumbs 2 to 4 cm away from the starting line. The fingers of the hands are placed on the ground at a distance equal to that between the shoulders. The runner eye sight is naturally fixed in the direction of his lane. Further action of start i.e. Set and Go are performed as you learnt earlier.

**(2) Baton Exchange:** In relay races the first runner passes the baton to the second runner the second runner will pass to the third and third to the fourth. This action is called baton exchange. This should be performed in baton exchange zone only. Length of baton exchange zone is 20 mtrs. There are two methods of baton exchange, (A) Visual method (B) Non - visual method.

**(a) Visual method :** Exchange of baton is seen by both incoming runner and outgoing runner so this method is called visual method. In this method outgoing runner has to see back side while running so it obstructs the speed of runner. This method of exchanging baton is more in use.



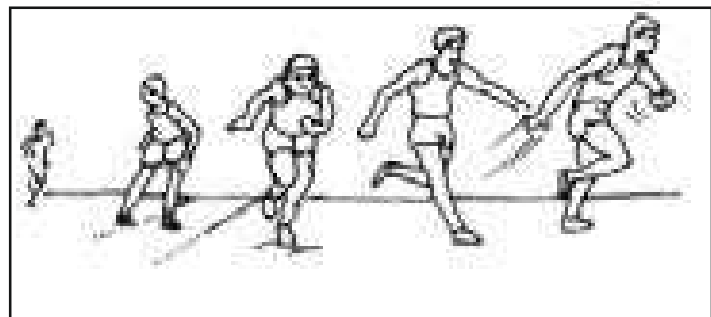
**(b) Non - Visual method :** In this running only the incoming runner can see the action of exchange. The outgoing runner can not see it. This method is more useful in 4 x 100 mtr relay. Exchange of baton is done while both the incoming and outgoing runner are running at full speed. There is no risk of reducing speed during exchange of baton. In this method incoming runner has to be more alert

while exchanging baton.

The exchange of baton is done in three ways, (1) Cup - shape method (2) The up swing method (3) The palm held skywards method.

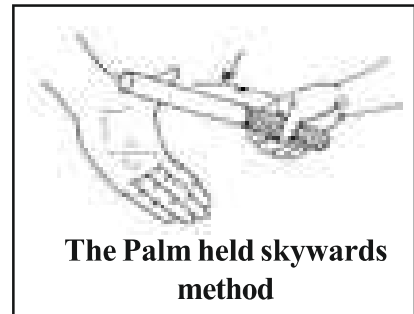
**(i) Cup - Shape method :** This method is more suitable to school children and beginners. In this method the outgoing runner runs with his hand near his waist in such a way that the palm is kept in the skyward direction and the thumb is kept in the forward direction. The incoming runner keeps the baton in the open palm of the outgoing runner near his waist.

**(ii) The up swing method :** In this method the outgoing runner extends his right hand with the palm pointing towards the ground and the thumb extended towards the body. Keeping the thumb and the fingers of that hand straight, he makes a shape of inverted " V ". The baton bearer gives an upward sweep to the baton and places it between the thumb and the fingers of his partner running ahead of him.





**(iii) The Palm held skywards method :** In this method the outgoing runner extends his arm backwards in such a way that the palm faces the sky., the thumb of the hand extended backwards points towards, his body. The fingers are straight and the thumb is free and away from the fingers. The incoming runner gives a downward swing to the baton and places it on the extended palm of his partner.



First runner in relay race takes crouch start. He keeps baton in his left hand. He will pass the baton to second runner in his right hand. Second runner while running will exchange the baton from his right hand to left hand and then he will pass to the third runners in his right hand. This way all the runners will exchange the baton. The second, the third and the fourth runner may run 10 mtr behind the first line of baton exchange zone towards the starting line. But baton exchange must be done in baton exchange zone only.

**(3) Finish :** The fourth runner of the relay team will cross the finish line with maximum speed like short distance running with baton in hand.

All competitors in relay race competition should keep in mind a few important rules which are as follows.

- (1) While taking a start any part of his body or baton should not touch in his own lane or ahead of starting line.
- (2) If competitor uses the starting blocks, his spikes or boots must have touched the ground.
- (3) The competitor should start running only after the sound of the pistol or the clapper is heard.
- (4) The lanes on the track of a relay race to be taken by teams are decided by lots.
- (5) In relay competition the runner has to carry baton only in his hand.
- (6) Baton must be exchanged only in the baton exchange zone.
- (7) If the baton falls down while changing, it must be picked up by the runner who has dropped it, he can not take the help of any other runner.
- (8) In 4 x 100 mtrs relay race all the four runners of a team have to run the entire distance in their own lane.
- (9) In relay race members of the team may decide the order of running according to their choice .

### Exercise

#### 1. Answer the following questions in one or two sentences :

- (1) Explain two methods of running in 800 mtrs run.
- (2) Explain the position of trunk in middle distance running.
- (3) Explain the finish in middle distance running.
- (4) Explain the visual method in relay run.
- (5) How is the baton in relay race ?

#### 2. Write answers in one or two sentences of the following questions :

- (1) Which runnings are included in middle distance running ?
- (2) Where is the starting line for 1500 mtrs run in 400 mtrs track ?
- (3) How a runner should over take his competitor in middle distance running ?
- (4) How many players are there in one team of relay run ?
- (5) List the methods of baton exchange in relay race.



**3. Answer the following questions by selecting correct option from the options given below.**

- (1) Which distance of running is included in middle distance running ?  
(A) 50 mtrs                      (B) 100 mtrs                      (C) 200 mtrs                      (D) 800 mtrs.
- (2) Which type of start is used in 1500 mtrs run ?  
(A) Standing Start                      (B) Crouch Start                      (C) Elongated Start                      (D) Bullet Start
- (3) How are the starting strides in middle distance running ?  
(A) Long                      (B) Short                      (C) Speedy                      (D) None of them.
- (4) What is the minimum weight of baton ?  
(A) 30 grams                      (B) 40 grams                      (C) 50 grams                      (D) 45 grams.
- (5) Which start should be taken by the first runner in relay race ?  
(A) Standing Start                      (B) Crouch Start                      (C) Any Start                      (D) Elongated start.



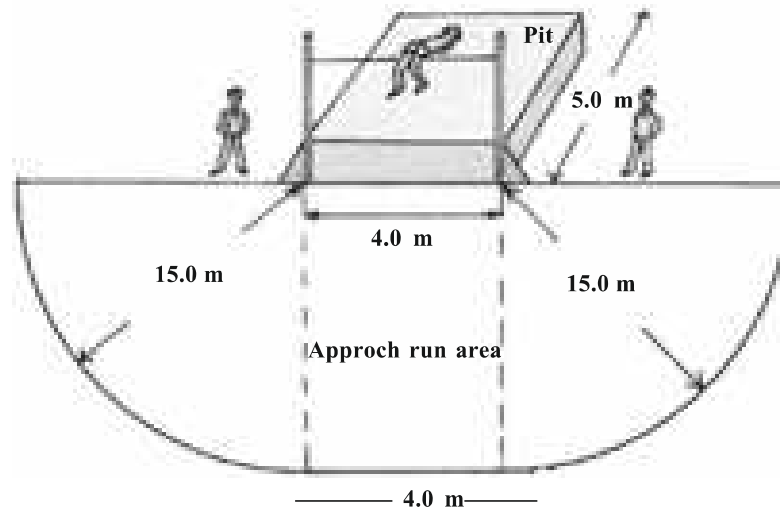
## 9

## High jump

● **High Jump :**

Among all the track and field events high jump occupies unique position. Skills for high jump are developed repeatedly and many changes have taken place in the skills of high jump. In high jump an athlete comes running, takes off on a stronger leg, lifts the body in the upward direction, crosses the cross bar and lands on the pit.

In high jump, if the athlete wants to jump higher, the parts of the body below the waist should be turned upwards to raise the centre of gravity of the body as high possible in air. Thus in high jump, lifting the body in the direction opposite to that of the force of gravity and maintaining the proper position of the body have great importance.

● **Ground:**

High Jump: Ground, Equipment

● **Approach run :**

Minimum length of approach run is 15 mtrs. Length of approach run for Olympic and international competitions is kept 20 to 25 mtrs.

From the uprights of high jump an area of 15 mtrs, radius is drawn and the entire area is levelled to be used as the approach run.

● **Pit:** Length is 5 mtrs and width is 4 mtrs. Instead of filling the pit with sand, rubber foam (pit) is used for safety.

● **Equipment :**

**Uprights :** They shall be sufficiently high as to exceed the actual heights to which the crossbar is raised by at least 10 cm. The distance between the uprights shall be not less than 4 mtrs nor more than 4.04 mtrs.

**Crossbar :** The crossbar shall be made of wooden or other suitable materials. The overall length of the crossbar shall be 3.98 mtrs, to 4.02 mtrs. The maximum weight of the cross bar shall be 2.00 kg. The diameter of the circular part of the crossbar shall be 2.9 cm to 3.1 cm. The end pieces shall be square in shape.

● **Supports of crossbar :** Support of the crossbar shall be 4 cm wide and 5 cm long with rectangular shape.

● **Skills :**

(1) Approach run.

(2) Take – off.

(3) Bar clearance.

(4) Landing.

Now let us discuss these skills in detail.

**(1) Approach Run :** Following items can be included in approach run :

● **Direction :** The direction to be taken by the athlete depends on the style that the athlete intends to adopt. In the scissor style, eastern cut-off style and fosbury flop style the take off leg is placed on the outside, away from the crossbar, compared to the free leg, so an athlete who takes off on the right leg will have to come to the take off point from the left side, while in the western roll and straddle style as the take off leg is coming towards the crossbar, the athlete will have to come running from the right side.

● **The angle (for the run) :** The angle of the body formed at the take off mark with the crossbar while running towards the side of the uprights in the direction of the approach run is called the angle of approach run. This angle is different in various styles of high jump. Generally the athlete arrives at the angle of  $39^\circ$  to  $45^\circ$ .

● **The distance :** After deciding the direction and angle of the approach run, the athlete has to decide the distance he will run before taking off. Generally athletes execute the take off after covering a distance of 12 to 15 mtrs in 7 to 9 strides.

**(2) Take off :** The athlete first makes a mark on the ground at a proper distance from the uprights and the cross bar. He takes this measurement with his arm. This mark is for athlete as his take off mark. Taking care not to obstruct the speed obtained during the run-up, the athlete touches the take off mark first with the heel of his take off foot, takes off and lifts his body in the upward direction. The last stride in the run up is longer and touches the take off mark first with the heel of his take off foot, slightly bends the knee of take off leg, centre of gravity of the body will be slight back and downward. Because of the momentum of the body, it will be pushed forward when the toe of the take off leg touches the ground. At this time, if the arm is swung from down to the upward direction, and if the free leg is straightened with a swing, it will be easier for the athlete to lift his body effectively in the upward direction. In short combination of lifting ability of take off foot, swing of free leg and upward motion of both the arms lift the body effectively in the upward direction.

**(3) Bar clearance :** The action of passing the body successfully over the cross bar is also as important as the take-off. The position of the body while clearing the cross bar plays an important role in crossing the bar. Position of body depends on different styles of bar clearance in high jump. Different styles of bar clearance is as follows. (i) Scissor style (ii) Eastern cut off style (iii) Western roll style (iv) Straddle Style (v) Fosbury flop style.

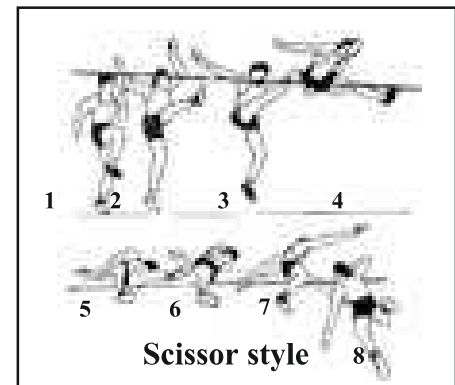
**(4) Landing :** While coming down towards the ground from the height of the crossbar landing is done in such a way that the reaction of the push is minimized and the landing is safe, without causing any injury to the body. The action of landing will be different according to the different styles adopted by the athletes.

Landing in scissor style is done on take off legs or some times on both the legs. In eastern cut-off style, it is on take off leg. In western roll style it is on take off leg and both hands parallel to cross bar. In straddle style it is on free leg and both the arms and then rolling on free leg side in the pit, in fosbury flop style landing is done on the back and the shoulders.

- **Styles of Bar clearance in high jump : (Bar Clearance)**

- (1) Scissor style.
- (2) Eastern cut off style.
- (3) Western roll style.
- (4) Straddle style.
- (5) Fosbury flop style.

**(1) Scissor style :** Approach run should be in such a way so that take off leg falls outside the crossbar, then athlete touches the take off mark first with the heel then toe of his take off leg takes off with the swing of hand and free leg and lifts the body in the upward direction, as athlete reaches at maximum height take sitting position over the crossbar keeping both hands and legs straight forward. After this position give momentum first to free leg, then take off leg towards the pit and lands on free leg or both the legs. While landing to reduce force of body he lands on toes, as leg touches the ground he bends the joints of leg in sequence.



This style is not more effective, because while clearing more height position of the body over the crossbar plays very important role. In this style position of the body over the cross bar is sitting, so to lift hand and trunk more energy is spent and more parts of the body fall between crossbar and centre of gravity of the body, so to gain more height, this style is not effective.

**(2) Eastern cut off style :** Approach run is same as scissor style, but before take off last two strides should be outside the cross bar. Lift the body with the help of swing of free leg, lifting ability of take off leg and swing of both the arms. While going over the crossbar athlete will turn the body towards the approach run so that heel of take of leg, knee, hip and buttock of that side remain near the crossbar. From this position bends towards the pit and brings take of leg downward quickly, so that waist will bend towards the crossbar and landing will be done on take off leg. While landing, keep both the arms upward so that they do not touch the crossbar. This style is also not very useful for clearing more height.

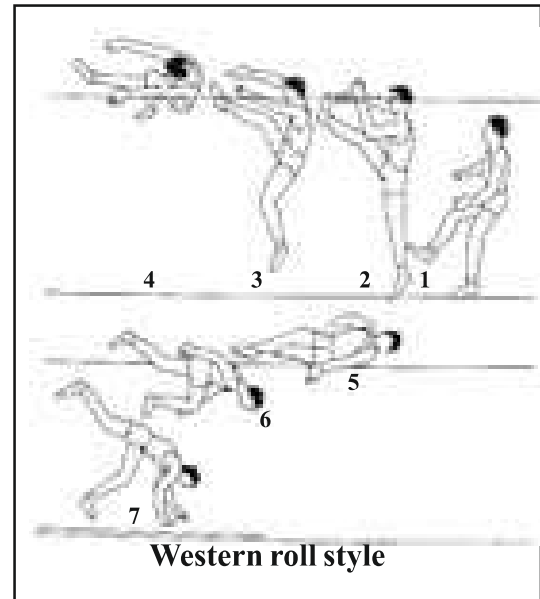
**(3) Western roll style :** The distance of approach varies from competitor to competitor. Some of them select 4 to 5 steps in approach run where as some of them select 10 to 12 steps. But most of the competitors select 6 to 8 steps. Steps are selected in such a way that take off leg comes, nearer to the crossbar in the last step. These steps are taken at an angle from  $40^\circ$  to  $45^\circ$ . A competitor increases his speed in last three steps. The last step is always longer than the other steps. This helps in having the higher swing of free leg. At the end of the approach run take off is taken by a strong leg.

Since, last step remains longer, the heel of the take-off leg first touches the ground. Then the toes of the leg touches the ground. At this moment the upward swing of the free leg helps the body to be lifted in the upward perpendicular motion.

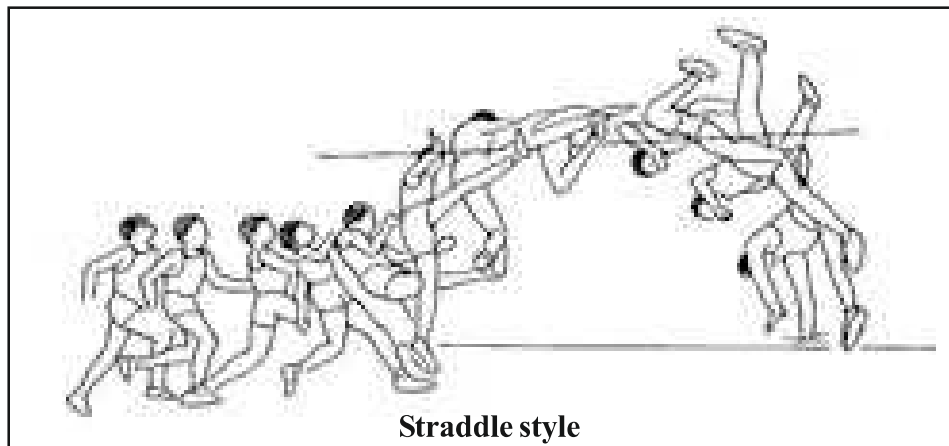
After take off the body passes over the crossbar, while crossing strong leg will be bent from the knee, and right side waist, the knee of the right leg and its thigh will be facing the cross bar. Free leg will be straight and shall remain parallel to the cross-bar. Thus the body shall remain in the sleeping position on the left side, landing will be done on take off leg and both the arms. During landing players will bend nearer joints, while take off leg and both hands will touch the ground.

In this style less part of the body falls between the centre of gravity and crossbar over the crossbar. So better height is cleared than the scissor and eastern cut off style.

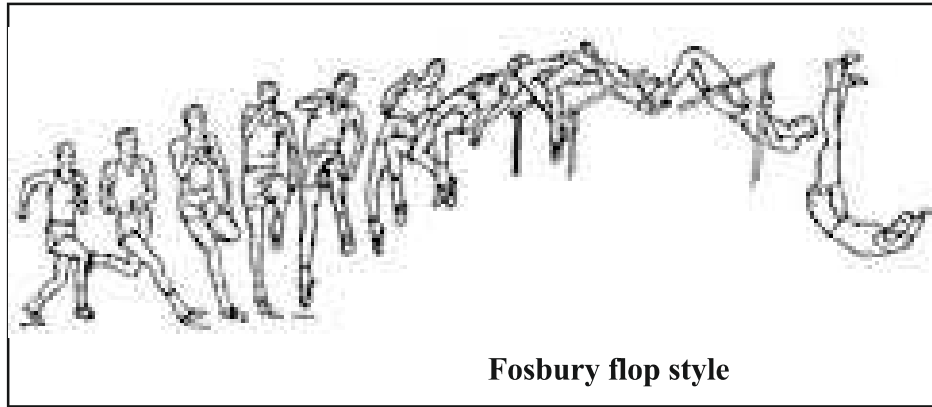
**(4) Straddle style :** In this style the athlete completes the running distance in 7 to 9 strides. He takes the strides from an angle of  $30^\circ$  to  $40^\circ$  in such a way that his take off foot comes near the crossbar. During the last three strides the athlete increases his running speed. The last stride is longer compared to other strides, then athlete places the heel of his stronger foot almost at right angle to the cross bar near it. During the take off action, the heel of the foot touches the ground first and then only his toes touch the ground. The take off leg is bent slightly and is given an upward swing.



After the take off the head and the shoulders of the athlete go above the cross bar and then the rest of the body comes above the bar. When athlete comes on the cross bar, his body stays facing down above the cross bar and parallel to it. While his free leg and the arm on that side are inclined towards the jumping pit from the cross bar. After crossing the bar, the athlete kicks in the air upwards with his stronger leg so that the rest of the body passes over the cross bar and starts coming down towards the pit. The athlete completes the landing with his free leg and both the arms.



**(5) Fosbury flop style :** In this style the back is turned towards the cross-bar, while taking off and because the body has to be turned around a perpendicular axis, the runway is kept semicircular in shape. The starting point and the take-off mark are in a straight line and at the right angle of the bar. The athlete arrives with a circular motion in such a way that the take-off leg is away from the crossbar. In this way he gains the speed needed for the take off. Most of the athletes take the first five strides straight in the direction of the up rights and the last three strides in a circular direction.



After acquiring the maximum speed through the approach run, the athlete will have to raise both his legs up to the lower edge of the bar. After take off both the legs are bent at the knees and with the upward reaction of the stamping of the foot during the take off and the swinging of the arms in the upward direction, the body is lifted in the upward direction. As a result the weight of the body comes quickly on the take off leg and so the action of lifting the body upwards is to be done quickly. As the arrival is speedy in the circular movement, the push of the body is stronger on the outer side of the take off leg. So in order to keep the weight of the body on the take-off leg, the athlete takes the last stride slightly sideways. As soon as the action of straightening the take-off leg becomes speedier the upward movement of the bottoms begins. At the time of the take-off the bar is by the side of the body. While athlete is crossing the bar, the bar will be towards his back. The shoulder on the side of the bar will stay upwards during the take-off. With this action the position of the body lying face upwards over the bar can be achieved easily.

As both the legs are together, they will hang downwards until the upper part of the body, including the bottoms passes over the bar. As the bottoms are pushed upwards, the position of the shoulders and the movement of the legs for crossing the bar become easy. As long as the bottoms do not clear the bar, the arms will remain close to the body. But as soon as the bar is cleared, the arms are straightened on the sides. As soon as the bottoms clear the bar, the knees are lifted towards the chest. After crossing the bar, the legs are straightened in the upward direction as a result of which circular motion at the back or in the body ceases and landing becomes possible on the shoulders and the back. This position looks like a Halasan or keeping legs forward in sleeping position.

In present time in National and International competitions most of the athletes use the fosbury flop style. To clear the maximum height Fosbury flop is the best scientific method.

During the Mexico Olympics, American athlete Dick Fosbury had used new method and cleared the 2.24 mtrs height with new record. So, this style is known as Forsbury flop.

● **Rules :**

- (1) The athletes shall compete in an order drawn by lot.
- (2) The athletes should wear clear number on the chest.
- (3) Each athlete will be given three trials at each height.
- (4) If he fails to clear the bar in all three trials, he will be out from the competition (This will not apply to solve the tie for first place).



- (5) The rate of increasing the height of the cross-bar should not be less than 2 cm.
- (6) In high jump, a competitor must take-off with one leg only.
- (7) The trial of athlete shall be failure in the following -
- After the jump if cross bar falls down.
  - If, before clearing the cross bar any part of the body crosses the imaginary line between the two uprights in level with the take off line, and after the jump touches any part inside the pit including the landing area.
  - If athlete does not take his trial within two minutes after the judge call.
- (8) A competitor can start jumping at any height announced by the chief judge.
- (9) A competitor can ask 'pass' at any height.
- (10) Last height that a competitor has cleared according to the rules, will be considered as his score.
- (11) Even after all the other athletes have failed, an athlete is entitled to continue jumping until he has forfeited his right to complete further.
- (12) After an athlete has won the competition the height or heights to which the bar is raised shall be decided by the athlete, in consultation with the relevant judge or referee.
- (13) In case of records, the judges shall also recheck the measurement, before each subsequent record.

### Exercise

#### 1. Answer the following questions in one or two sentences :

- (1) What is the length and width of pit in high jump ?
- (2) List the equipment used in high jump.
- (3) Write the various styles of bar clearance in high jump.
- (4) How is landing performed in straddle style ?
- (5) Which is the best style for clearance the bar in high jump ?

#### 2. Write short notes :

- (1) Scissor style.
- (2) Eastern cut off style.
- (3) Western roll style.
- (4) Straddle style.
- (5) Fosbury flop style.

**3. Answer the following questions by selecting correct option from the options given below.**

- (1) What is the minimum length of approach run in high jump ?  
(A) 5 mtrs (B) 10 mtrs (C) 15 mtrs (D) 20mtrs
- (2) What is the length of cross bar ?  
(A) 3.94 to 3.98 mtrs (B) 3.98 to 4.02 mtrs  
(C) 4.02 to 4.06 mtrs (D) 4.06 to 4.10 mtrs.
- (3) What is the maximum weight for cross bar in high jump ?  
(A) 2.00 kg (B) 3.00 kg (C) 4.00 kg (D) 5.00 kg
- (4) What is the length of pit in high jump ?  
(A) 2 mtrs (B) 3 mtrs (C) 4 mtrs (D) 5 mtrs
- (5) How many trials are given to each competitor at new height in high jump ?  
(A) One (B) Two (C) Three (D) Four

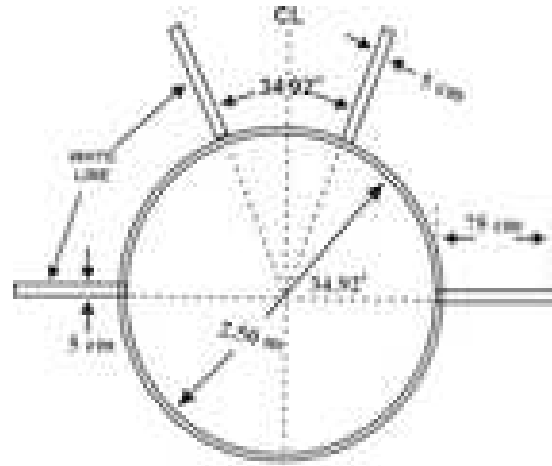


10

## Discus throw

### ● The ground for Discus Throw :

As shown in the figure, the throwing circle for discus throw is drawn with a diameter of 2.50m. The diameter line is extended outside the circle on both sides to the length of 75 cm and is 5 cm broad. Instead of the extended lines, wooden strips of the same measure can be put. These lines are straight with the imaginary line passing through the centre of the circle and at the right angle with centre line of the throwing area. The surface inside the circle is levelled with cement concrete or such hard substance. The surface must not be slippery.



**Discus Throw**

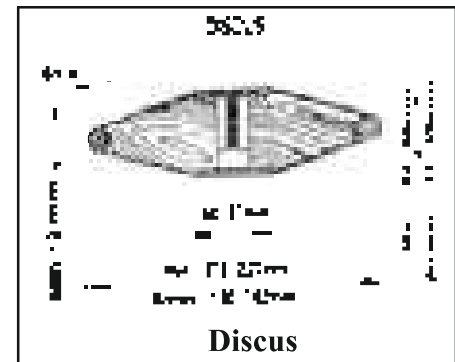
An iron ring 6 mm thick is fixed just outside the circle. It should be in white colour.

The top of the rim of circle should be at the ground level. The inner part of the circle should be made 14 mm to 26 mm below the ground level.

**The Throwing Area :** The throwing area for 'discus throw' is drawn by extending two lines beyond the circle. The lines are at an angle of  $34.92^\circ$  and are 5 cm broad. The surface of the throwing area will be even and made of soft earth or with well arranged lawn. So, there will be a clear throwing mark of discus.

**The cage for discus throw :** For the safety of the spectators, official and participants, a suitably constructed cage is erected around the throwing circle. The cage is made of 6 panels of netting 3.17 mm wide and 4 m in height arranged. The panels should be fixed in such a way that the discus will neither pass through the net nor from under it with the push or the momentum. The cage is inspected regularly to check its safety.

**Discus :** As shown in the figure, the discus is made of wood, iron or fiber wood. Iron and steel brass are used in the making of the discus. The edge of the ring on the rim of the discus are circular in shape. The radius of the circular part is approximately 6 mm.



On both the sides of the discus, the surface will be equally sloping and having a circumference of 2.5 cm to 2.8 cm from the centre. In the middle part of the edge of the discus, a metal plate is used while in the part between the two, wood is used. The discus may be prepared without metal plate, but its measurement should be as per rules. The discus of 2 kg for men and 1 kg for women are used for discus throw.

### ● The skills of discus throw :

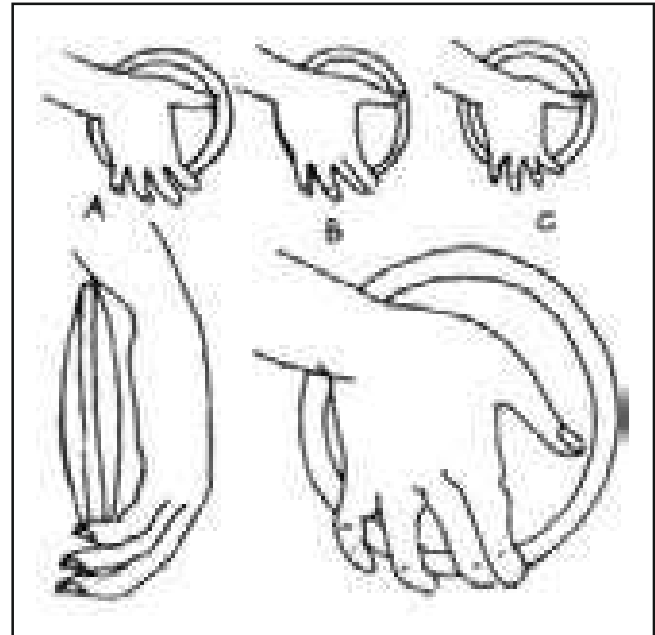
A thrower throws the discus from the throwing circle, which has a diameter of 2.50 m. With the help of the body movements, the thrower gets the force from the movement. He uses the force for throwing the discus

to a maximum distance. We will study the skills of discus throw as under. (1) Grip (2) Stance (3) Arm swings (4) Turn (5) Throw (6) Release (7) Changing of legs.

**(1) Grip :** The way the discus is held in the hand is called the grip. The way the discus should be held depends mainly on the size of the athlete's palm and the length of his fingers. The force of the push depends mainly on the grip. So the discus is held at the edges with the tips of the fingers so that the discus is balanced properly in the hand and can be given momentum while turning it. The palm remains against the discus while the thumb is spread in a straight line with the wrist. There are four types of grips as shown in the figure.

#### Types of Grip:

(A) In the first type of grip, all the fingers are spread on the discus. The edge of the discus is held firm with the finger tips. This type is suitable for keeping the balance and gives a better chance for the discus to spin after the throw. This type of grip is more suitable for athletes having long arms.



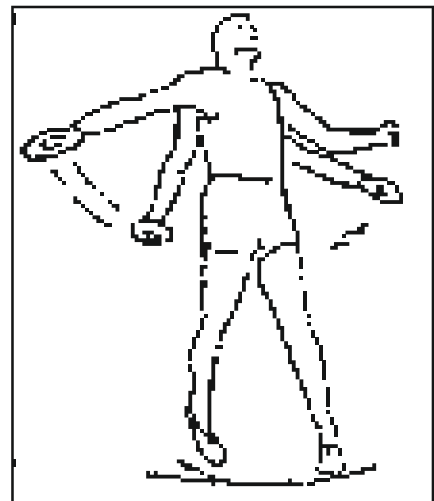
Types of Grip

(B) In the second type of grip, if the fingers are long, the first two fingers are joined together and the other fingers are spread on the discus. In this grip, the main pressure is given on the first two fingers.

(C) In this types of grip, the last (small) finger is spread away from the others. Competitors whose fingers are short, hold the discus keeping the rim of the discus in between the tips of the fingers and the inner cut of the knuckles. This type of grip is more suitable for athletes having short fingers.

(D) In this type of grip, the first two fingers are kept joined together and the other fingers are spread. The other end of the discus touches the wrist and the middle of the palm does not touch the discus. The thumb is held near the first finger. This grip is called the 'claw' type of grip because it resembles the grip of an eagle on its prey.

**(2) Stance :** The right foot is placed touching the back part of the circle from inside, while the left foot is placed 40 to 50 cm inside the circle in the direction of the throw. The weight of the body is divided equally on both the legs. The muscles of the body are relaxed. After taking the stance, a competitor takes a suitable grip on the discus with his right hand. Now he will be in a position to start taking the preliminary swings.



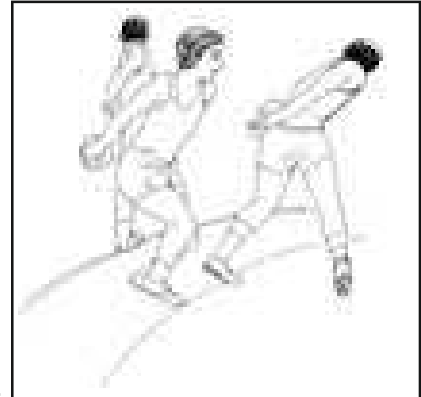
Preliminary arm swings

**(3) Preliminary arm swings :** To remove the inertia of the discus and to give the body more freedom of movement, every competitor generally swings his arms twice or thrice. These are called preliminary swings. During the swing, the discus is brought from above the left shoulder towards the right shoulder. The weight of the body is shifted from the left

leg to the right leg. The left leg is loosened at the knee and the heel is raised. When the arm is swung forward the weight of the body shifts on the left leg and the right heel is raised. Normally the competitors take those arm swings in order to prepare their body and mind for the throw and to keep the discus in proper control.

**(4) Turn (Pivot):** For gaining force from the body, it is necessary to remove the inertia from the body, so it is necessary to bring the body in motion. It is not possible to gain force within the distance 2.50 m. It is very difficult to control the body at the time of throwing the discus. It may happen that the competitor crosses the circle and enters into throwing area. So it is necessary to take turn and then throw the discus.

As shown in the figure, when the right hand holding the discus reaches the far end of the backside, the body is turned around leftwards on the toes of the left foot. The right foot is lifted and moved up to the center of the circle. He takes complete  $1\frac{3}{4}$  (one and three - fourth) turn and sends the discus in a maximum motion. During this entire action of turning around, the knees are bent a little (in a sitting position) and kept in that position. The toes of the feet do the job of pivoting. During the turning action the hand with the discus is constantly held upto shoulder. The left arm is in a loose, relaxed position.



**Turn**



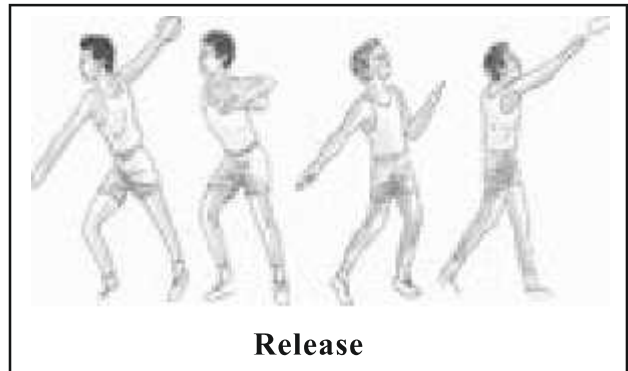
**Throw**

**(5) Throw:** The feet movement in the discus throw, is to be understood. The action of straightening the right leg which is bent at the knee in the earlier position, creates the driving force and the action of throwing begins. At this time, the heel of the right foot moves above the ground and the leg bent at the knee becomes straight, and the entire weight of the body is lifted with a great force above the ground with an upward push. When the right hand makes a right angle with the throwing direction, the discus is released from the hand.

At the time of release, the palm is facing the sky and the discus is in the groundward position. At this time the discus is given the last push with the wrist and the fingers.

**(6) Release :** The discus is thrown in such a way, that it travels in a circular, clockwise direction. The discus is given the last push with the first finger.

**(7) Changing of feet or the reverse :** During the action of throwing the discus in order to maintain the balance of the body and to prevent a faulty throw, the competitor performs the action of reverse or changing the feet. In this action, the right foot is placed at the spot where the left foot is and when the body turns towards the left, the left leg is raised straight towards the back and the right leg is bent from the knee.



**Release**

### **Rules of the Discus throw competition :**

Some important rules are given belows for the Discus throw which will be useful to the competitors.

- (1) The order of the throws is decided by lots.
- (2) Every competitor has to throw the discus only from the circle.
- (3) During the throwing action, if any part of the competitor's body touches the upper part of ring or the ground of the throwing area, it will be regarded as a foul.
- (4) The competitor shall go out of the rear semi - circle only after the discus thrown by him lands on the ground and only after he has regained the steady standing position.
- (5) The trial will be declared a foul, if the discus falls on either of the sector lines.
- (6) A competitor will not be allowed to tie his fingers together, nor will be allowed to use adhesive tapes for this purpose. He will not be allowed to use handgloves also.
- (7) If a competitor does not arrive when called for a trial, he will not be given another chance.
- (8) If there are eight or fewer competitors each will be given six trials in their turn to decide the winner rank.
- (9) If there are more than eight competitors, each of them will be given three trials by turn in the first instance. Those eight competitors who score the highest distances are given three more trials by turns. If there distance is a tie for the eighth place, all those competitors who have scored the same distance are included for the subsequent round.
- (10) If there is a tie for deciding the ranks of the winners, the next best performance of all competitors involved in the tie will be taken into consideration for resolving the tie. If the points scored by two or more competitors in all the six trials are equal and if the tie is for the first rank, the tie shall remain.

### **Exercise**

#### **1. Explain the following skills.**

- (1) Stance in discus throw
- (2) Swings of the arms.
- (3) Release of the discus
- (4) Changing of feet in discus throw.

#### **2. Answer the following questions in one or two sentences :**

- (1) How does the order of the throw is decided ?
- (2) Which materials are used for making discus ?



- (3) Write down the names of the various skills of discus throw.
- (4) In which direction will the discus travel, when the right handed athlete throws the discus ?

**3. Answer the following questions by selecting correct option from the options given below.**

- (1) What is the weight of discus for men ?  
(A) 1 kg                      (B) 2 kg                      (C) 3 kg                      (D) 2.5 kg.
- (2) What is the angle of the throwing area ?  
(A) 34.92 degree              (B) 34.12 degree              (C) 32.92 degree              (D) 40 degree.
- (3) If there are six competitors in discus throw, how many trials will be given to each competitor ?  
(A) 3                              (B) 5                              (C) 6                              (D) 8
- (4) How many skills of discus throw are there ?  
(A) 3                              (B) 4                              (C) 7                              (D) 8

**4. Suggested Activities :**

- (1) For practice, the discus of less weight should be used.
- (2) Arm swings of turn, release and changing of feet should be done without discus. Use the tennicoit ring.
- (3) Try to release the discus in such a way that it travels in a circular, clockwise direction for right handed, left handed athletes should make necessary adjustment. For this practice, stand at a particular place, release the discus with extended right or left hand towards the sky.



Kabaddi has a prominent place in all the popular and prevalent games. It is especially played in Gujarat, Rajasthan, Andhra Pradesh, Bengal and Madhya Pradesh.

This game's origin or source is Gujarat and Maharashtra. The basic skills are to swiftly hold or catch the opponent and to get away from the hold and holding the breath. This game was regulated and organized by rules and systematic competitive tournaments were started by the players of Satara & Pune in year 1912. Then in year 1923, Hind Vijay Gymkhana of Baroda and in 1934 Maharashtra Physical Education Board, Pune arranged the competition, tournaments with revised and improvised rules. As result in 1938 Kabaddi was included in 'Indian Olympic Games' and got the status of National Games. In year 1952 National Kabaddi Federation of India was established. In 1956 women Kabaddi competition started and in 1961 it was given the place in inter-university games.

In year 1936, in Berlin Olympics Hanuman Vyayam Pracharak Mandal, Amravati gave the demonstration of Kabaddi for popularizing this game at the world level. But till today this game has not got the competitive status in Olympic (has not got the status of sport event). National Kabaddi Championship started in 1952. Today kabaddi from a big play ground game has become an indoor or outdoor game in small ground. Kabaddi is a very interesting and thrilling, exciting game. The ground is made soft to avoid the injury to the players. Now it is played on mattresses. This game is very energetic, healthy and inexpensive. Since its inclusion in Asian games, till today in India has maintained the championship title.

As it requires very less equipments, less space or ground and as requires quickness, alertness and energy as it develops presence of mind, body, soul and team spirit, attracts everyone-old and young.

#### ● The Equipment:

- (1) Mattresses (2) Whistle (3) Stop Watch (4) Marking thread and chalk (5) Score board
- (6) Red, Green, yellow cards

#### ● Game time:

For Senior-Junior Boys: 20-5-20=45 minutes, i.e. a game time of 20 minutes (two halves of the full-time) with a 5 minute break.

For girls and Sub Junior boys: 15-5-15=35 minutes, i.e. a game time of 15 minutes (two halves of the full-time) with a 5 minute break.

#### ● Ground for men (Senior and Junior boys):

Length-13 metres and width-10 metres

Distance between end line to central line-6.50 metres

Central line to cross line (balk line) – 3.75 metres

Cross line to bonus line – 1.0 metre

Bonus line to end line – 1.75 metres

Lobby should be 1 metre broad and 13 metres long from ground line on both sides (13 x 1.0)

Waiting Block - It should be 2.0 metres away from both end lines. Its measurement is 8.0 metres in length and 1.0 metre width.

● **Ground for women and subjunior boys:**

Length-11 metres and width-8 metres

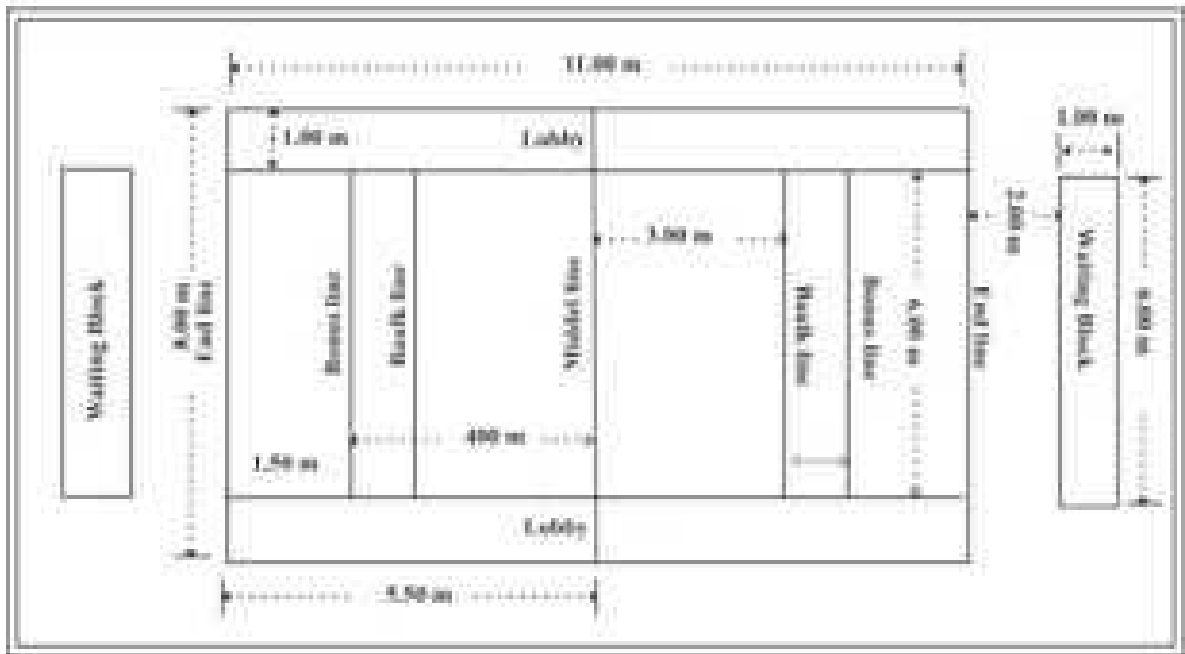
Distance between end line to central line-5.50 metres

Central line to cross line (balk line) – 3.00 metres

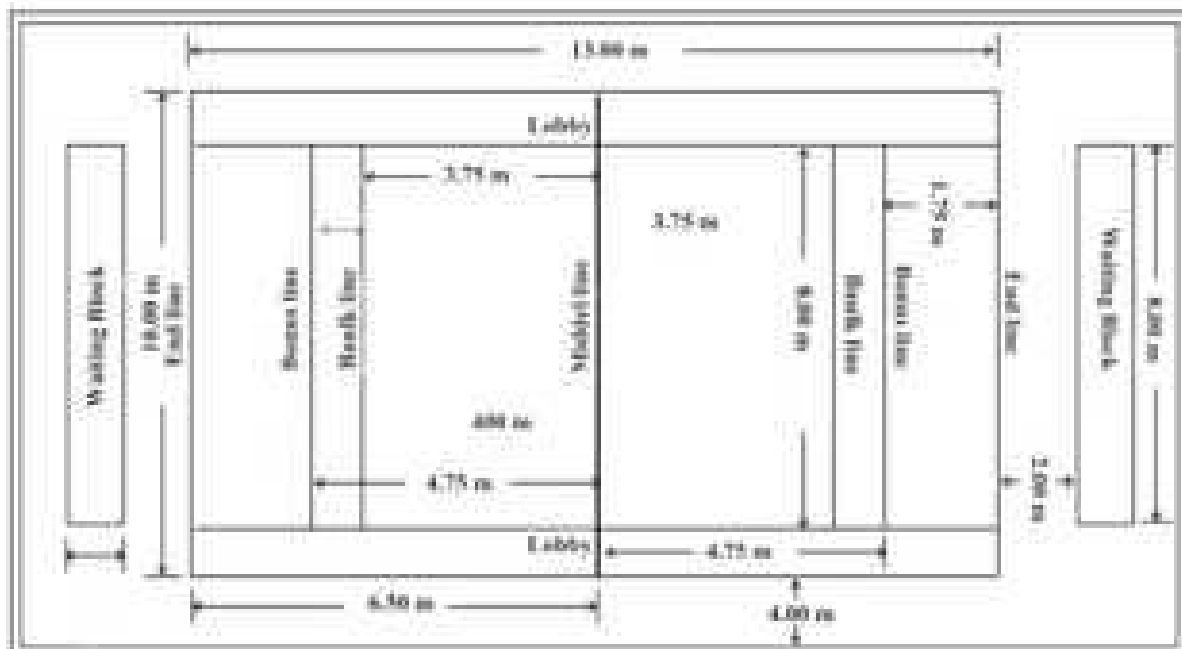
Cross line to bonus line – 1.0 metre

Bonus line to end line – 1.50 metre

Lobby should be 1 metre broad and 11 metres long from ground line on both sides (11 x 1.0) metres



**Diagram ground for women**



**Diagram ground for men**

Waiting Block - It should be 2.0 metres away from both end lines. Its measurement is 6.0 metres in length and 1.0 metre width.

● **Skills of Kabaddi :**

There are mainly two skills in Kabaddi :

- (a) Raider's (Offender) skill.
- (b) Anti - Raider's (Defender) skill.

● **Skills of Raider :**

- (a) To touch with leg.
- (b) Breaking cover.
- (c) To chase (pursuit).

● **To touch with leg :**

The raider goes in the opponent's court chanting (cant) a word Kabaddi; he steadily, swiftly tries to touch the opponent by stretching his leg.

● **To break the cover :**

The defenders are ready in many ways to cover the raider then the raider quickly tries to touch opponent by stretching his hand or leg, while the defenders try to catch him, the raider jumps over and gets out of the cover or breaks the chain and tries to get away from sides or from below. This skill is called as to break the cover.

● **To chase (Pursuit) :**

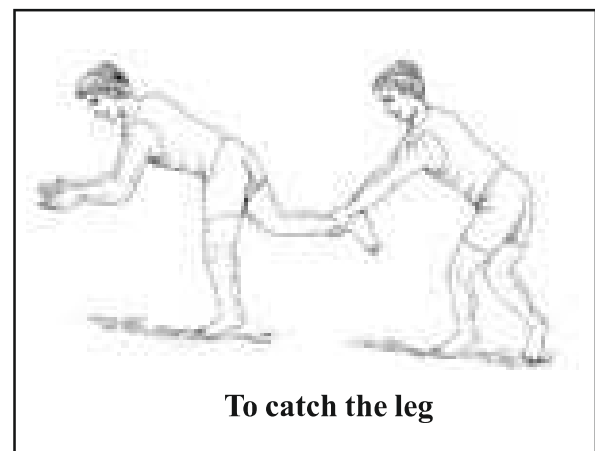
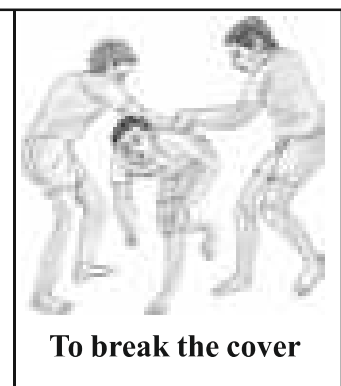
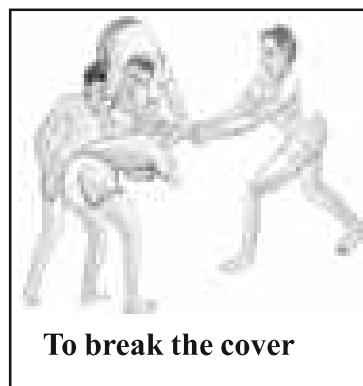
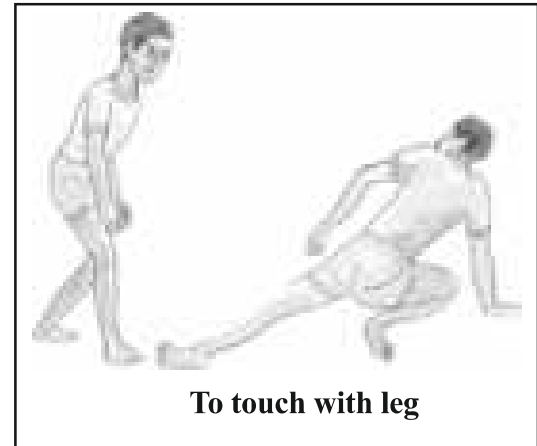
When the raider has completed his legal raid and while returning to his court and his back towards the opponents' court then an opponent raider suddenly chases and quickly touches him with leg or hand and safely reaches his court. This skill requires speed, jump, increase the speedy motion or to stop it.

● **Skills of Defenders :**

- To catch the leg.
- To catch the hand
- To catch the hand - leg.
- Chain cover.
- One chain cover.
- Two chain cover.
- Three chain cover.
- Half moon cover.

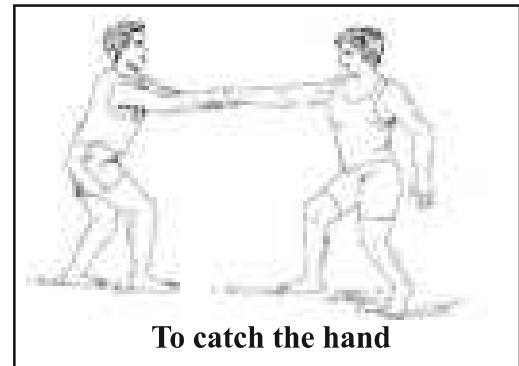
● **To catch the leg :**

When the raider crosses the baulk line or tries to cross it, the defender's corner player holds the stretched leg quickly from the ankle and raises it above the ground towards himself. So the raider gets imbalanced and his breath breaks.



**To catch the hand :**

In this skill when the raider tries to cross the baulk line, he stretches his hand in order to touch the opponent. The defender as soon as gets a chance, holds the opponent's wrist and pulls him towards himself.

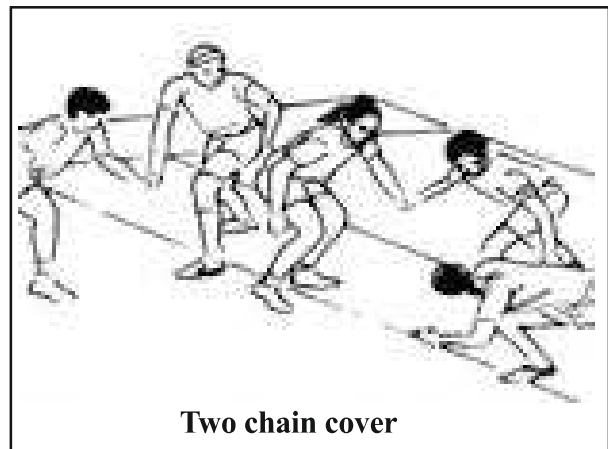
**To catch the hand - leg :**

During the raid the raider stretches his hand and leg to cross the baulk line, he tries to cross the baulk line with his leg and tries to touch the opponent with either of his moving hands. At this time a player of the defender team holds his leg with one hand and with another hand holds or catches his hand and pulls him toward himself. So the raider gets imbalanced.

**Chain cover :**

The defender team's players hold each other's hand and thus by making chain try to cover or catch the raider. In this skill the defender team's players make different types of chains. These chains can be as follows :

- a) One chain cover.
- b) Two chain cover.
- c) Three chain cover.

**Half moon cover :**

When the raider instead of trying raid on corner to cross the baulk line raids or tries to cross the baulk line from middle, then immediately the defender team's player form a semi - circle and try to cover or attack him from both sides and prevent him from going back to his court safely.

**Rules of the Game :**

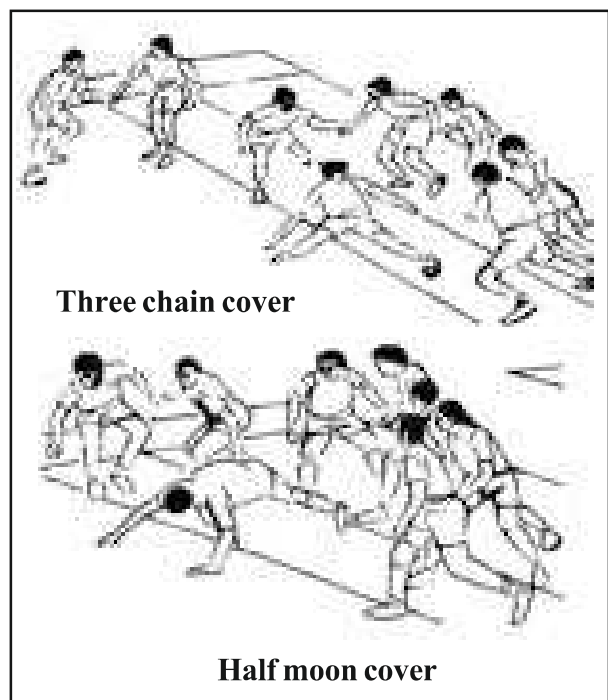
(1) Each team has 12 players, in which 7 in play and 5 are substitutes.

(2) This game is played on smooth, plain, even ground and on mattresses also.

(3) The game is started by tossing a coin, the toss winner chooses his court or attack (Raid). During the half time both the team exchange the court. The number of the players in the beginning of second half will be same as left in the first half.

(4) The raider has to start chanting the word, "Kabaddi - Kabaddi" from his court.

(5) One point is awarded for one player's out of opponent team.



- (6) Both the teams get to the raid one after another, turn by turn.
- (7) No player can apply any oily substance during the game (while the play is on).
- (8) Before collision struggle if any part of a player's body is out of the court he will be considered out. But during struggle if the player's body part is out of the court or if his body is in touch with any player's body or if some body parts inside, then he will not be considered out.
- (9) During struggle with the body of opponent lobby is included in the court.
- (10) The players who are out will sit in the waiting block in order of getting out and respectively will enter in the game in the order they got out, by getting a point.
- (11) If the word Kabaddi is started lately or slowly then referee can warn him. But if he repeating and do intentionally, then the opposition is given the technical point.
- (12) If the breath of the raider breaks while canting "Kabaddi - Kabaddi" in the opponent's court then he is declared out.
- (13) While defending, the opponent can not be pushed. The pusher will be considered out.
- (14) If all the players of a team are out, then the points of out players and two extra points have to be rewarded, to the opponent. It can be called as lona.
- (15) If during raid more than one raider starts the raid then referee sends the players back and the turn is considered over. If this error or mistake is repeated then raider team is given warning and opposition is given a point.
- (16) When the raider is in the opponent court, the defender team's player cannot cross the centre line and if he does so, then he is considered out.
- (17) No player can take drugs or alcoholic substances.
- (18) The player who is out, dismissed or banned can not be substituted or make alive.
- (19) For discussion or game plan, each team gets two time -outs of "30 seconds" each in each half time, for which the captain or the coach has to get permission from the referee.
- (20) For proper management of game there is one main referee as well as assistant umpires also, who decide for all fouls as well as points. He can inform the player by showing him different cards according to the need.
  - Green card - Warning / Alert.
  - Yellow card - Temporary dismissal.
  - Red Card - Dismissal for the game or whole tournament.
- (21) When the game starts, there should be 7 players, of each team in their court.

### Exercise

#### 1. Answer the following questions.

- (1) Explain the half-moon cover skill.
- (2) Explain to touch with leg skill.
- (3) Explain the skill to break the cover.



**2. Answer the following questions in one or two sentences :**

- (a) Which are the skills of defender team ?
- (b) What is meant by crossing baulk line ?
- (c) State the length of women's court.
- (d) In one half-time, how many time-outs can be taken ?

**3. Answer the following questions by selecting correct option from the options given below.**

- (1) How many players should be there in start of play ?  
 (A) 5 (B) 7 (C) 6 (D) 8
- (2) How Many points are awarded for getting one opponent player out ?  
 (A) Two (b) Five (c) One (D) Three
- (3) How many extra points are awarded for Lona ?  
 (A) Three (B) Four (C) One (D) Two
- (4) What is the length for men's Kabaddi court ?  
 (A) 7 meters (B) 13 meters (C) 10 meters (D) 12 meters
- (5) When can an out player be revived ?  
 (A) When second half begins (B) When opponent's any player is out  
 (C) When opponent's raider returns back safely after a raid.  
 (D) When a bonus point is awarded
- (6) When is lobby included in court ?  
 (A) When raider returns back. (B) After the half time.  
 (C) When the game begins. (D) During the struggle with opponent player.
- (7) Which point is awarded to opponent, when the Kabaddi word is intentionally lately started even after warning ?  
 (A) Minus point (B) Bonus Point (C) Technical point (D) Tackle point
- (8) What is the break the chain skill of raider called to break cover of opponent ?  
 (A) To raid (B) To touch with leg (C) To break the cover (D) To kick.
- (9) How many halves are to be played in Kabaddi ?  
 (A) Two (B) Three (C) One (D) Four
- (10) How far is the baulk line from centre line in men's kabaddi court ?  
 (A) 3.5 meters (B) 4.0 meters (C) 3.75 meters (D) 4.50 meters



The game of basketball is considered as one of the fastest games. Men and women play this game with enthusiasm. It can be played outdoor and indoor. It was invented in 1851 by an American named Dr. Jems Neysmith.

Since, this game was played keeping the basket at particular height and throwing the ball in it, it was named as basket ball. At latter stage instead of basket a ring with a net was replaced. This change was done because it was difficult to put out the balls being collected in the basket. This was hindering the game also. In the year 1894, the rules of the game were formulated and considered as international rules. Initially the measurements of the play ground were not fixed. So the players of the team were kept 5, 7 and 9 also. But by means of formulating rules as international ones, the number of the playing players was kept 5. Since, the game is speedy, the number of substitutes was kept 7.

In the year 1897, the first world basketball championship was organized in America. For the wider development of this game an “International Basketball Federation” was established in the year 1932.

In 1936, the competition for men was organized for the first time in the 11th world Olympic games conducted in the Berlin city of Germany. Likewise the competition for women was organized for the first time in the 21st world Olympic games conducted in Montrial in the year 1976.

In 1900, Charse Peterson tried to popularise this game in kolkata city of India. From 1920 the Young Men’s Christian Association (Y. M. C. A.) in Chennai (Madras) had tried to popularise this game through the college of physical education, in India. In 1950, the Basketball Federation of India was established to co - ordinate the game. In 1951, when the first Asian game’s competition was conducted in Delhi, the capital of India, in which the men and women Basketball teams took part in them. In India, the Basketball games competitions are organized every year at different levels i.e. District, State and National levels.

#### ● **Basket -ball play-ground:**

##### **Measurements :**

- (1) Length and width : 28 m x 15 m
- (2) Centre Circle : Radius - 1.80 m
- (3) Free throw lines : 3.60 m

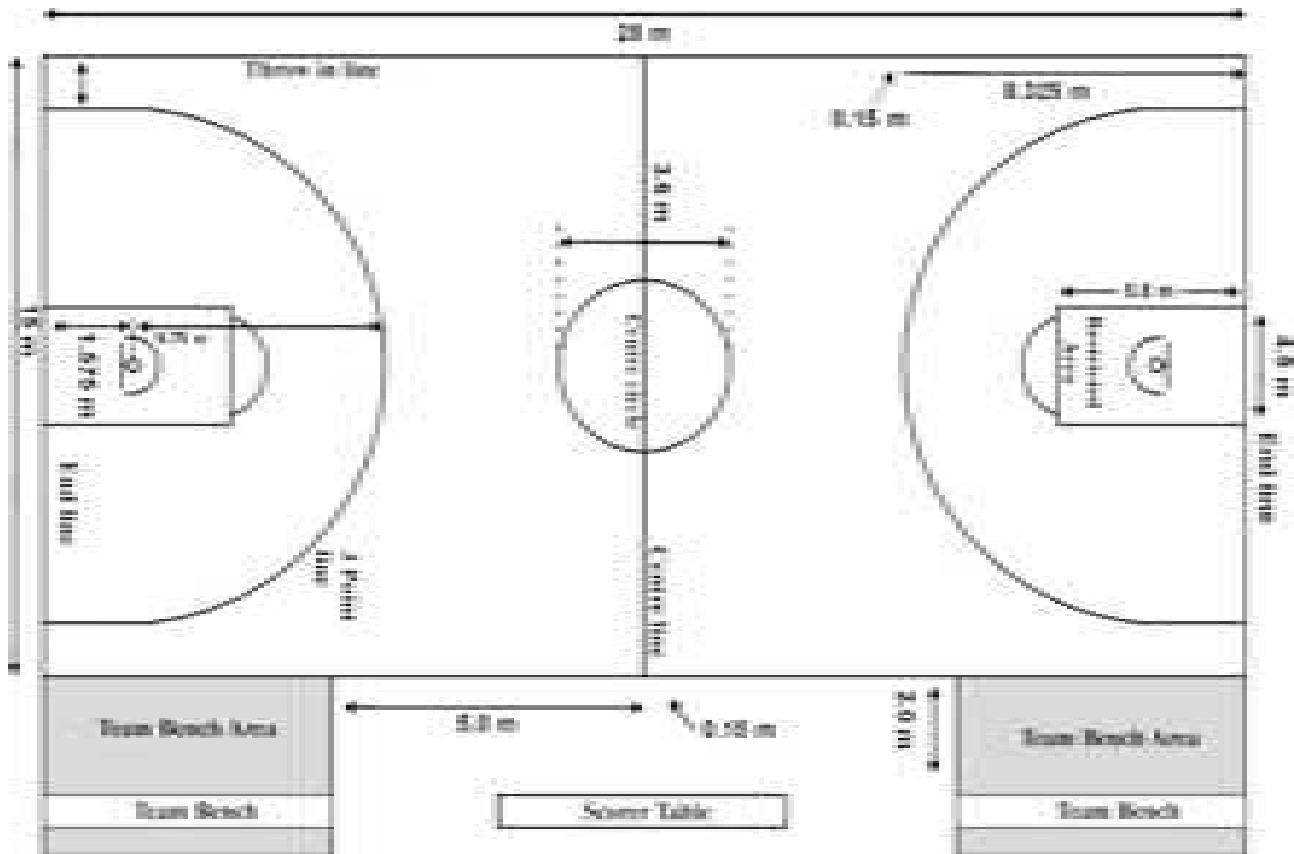
##### **Equipments :**

- (1) Boards : Two boards are required.  
Length and width of Board : 1.80 m x 1.05 m.  
Thickness of board : 3 cm
- (2) Ring and Net : Iron round ring : Inner diameter 45 cm  
Thickness of iron rods : 20 mm  
Length of net : 40 cm

##### **Ball :**

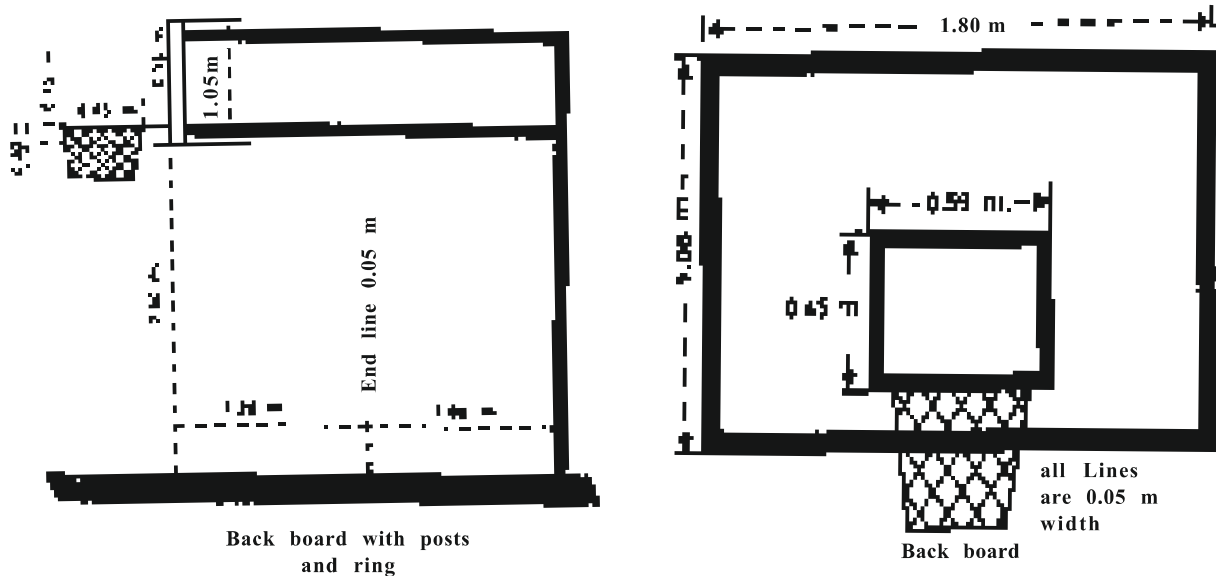
- Round rubber ball. Weight : 600 gms to 650 gms.
- Circumference : 75 cm to 78 cm

## Basketball Play ground



### Other Equipments :

Scorebook, Stop and go watch, stop watch, Call bell, Bell, Score board and foul indicator numbers from 1 to 5, out of which 1 to 4 numbers should be black colour and the 5th one should be red colour.



**Skills :**

- (1) Passing :** (1) Two hand over head pass. (2) Two hand chest pass.  
 (3) Two hand bounce pass. (4) One hand under hand pass.  
 (5) Two hand under hand pass.
- (2) Dribbling :** (1) Low dribble (2) High dribble
- (3) Shooting :** (1) Shooting without support (2) Shooting with the support of board
- (4) Lay up shot :**
- (5) Set shots :** (1) One hand set shot (2) Two hand set shot

Now we shall get information regarding different skills of the game.

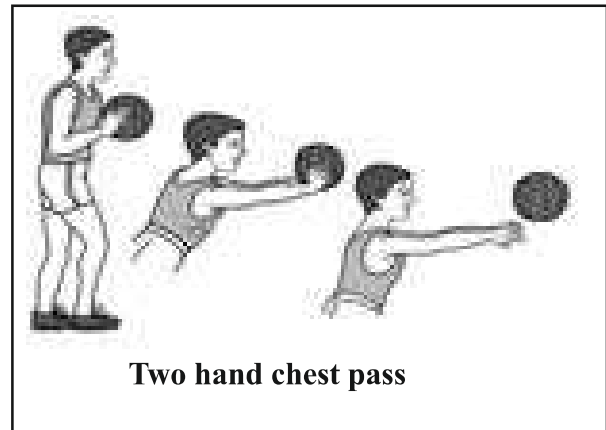
**(1) Passing :**

Passing being the basic skill in the game of basketball, it has got more importance. By means of getting control over the skill of passing, the game can be made speedy, which will be helpful in scoring more baskets.

In the game of basket ball, the action of giving the ball from one player to the other player of the same team is called “passing”. For the effectiveness of this skill in the game, the well understood co-operation of all the players is quite necessary. So, to win the game the mastery over the skill of all the players becomes necessary.

Now, we shall get information regarding types of the skills of passing.

**(i) Two hand over head pass :** A player in the basic position, in which he shall keep his both the legs little open and bent from the knees. His eye - sight shall remain in front, the back shall be straight and the body shall remain little leaned in the front and shall hold the ball. From this basic position he shall take the ball in front of the forehead. The hand shall be kept bent from the elbow and shall remain on the sides. Then keeping the grip over the ball, shall take the wrists downward. Then putting one leg in front shall extend the hands in front of the head alongwith a ball. From there he shall release the ball with a jerk of wrists from over the head. The body weight shall come over the front leg.



**(ii) Two hand chest pass :** A player shall hold the ball and come in the basic position. He shall bring his wrists little downward alongwith a ball. Then keeping the eye-sight towards the receiver of the ball shall release the ball speedily with a push of the wrists. He shall push the ball from the front of his shoulders. The ball shall travel paralalled to the chest of the receiver of the ball. The motion of the ball shall be the direction of the movement of the arms of the clock. After the release of the ball, the weight of the body shall be on the front foot and the palms of the hands shall remain in the outward direction, but shall remain nearer to each other.

**(iii) Two hand bounce pass:** A player shall hold the ball in the basic position. The ball is not passed in the front, but instead, the ball is collided with the ground and sent to the receiver. The ball shall reach the receiver at an angle at which it might have been collided. This skill is called V pass also.

**(iv) One hand under hand pass :** The player shall hold the ball in the basic position. Then he shall bring the ball near the right knee. He shall keep the elbows nearer to the body. Then he shall keep the right hand straight keeping its palm in the direction of the throw. To give support to the ball shall keep the left hand in such a way that it remains in the front. Then alongwith taking the left leg in the front shall give a swing to the hands and take them in the front. When the ball comes nearer the plane of the shoulders, the ball shall be released with the push of the fingers. After the release of the ball, the palm of the right hand shall remain toward the sky. This pass can be performed with the left hand from the left side.

**(V) Two hand under hand pass:**

A player shall hold the ball in the basic position and bring it on the right side near the waist. Right elbow shall remain on the back side near the body. Left hand shall remain in front touching with the body. Eye-sight shall be in the direction of the throw. From this position he shall do the action of pass like one hand under hand pass, with both the hands. This pass can be performed from left side.

**(2) Dribbling :**

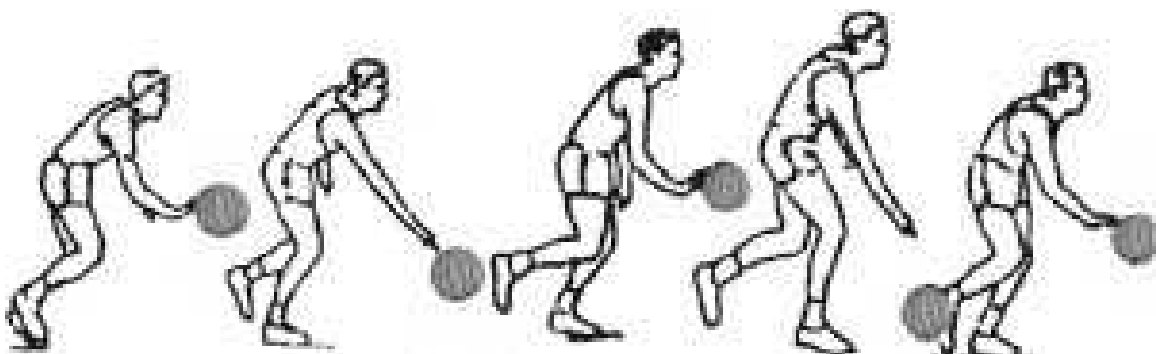
In the game of basketball the skill of tapping the ball with one hand on and often on the ground is called dribbling. Alongwith dribbling one can go forward with a ball. After dribbling the ball once it can be hold, but after holding it can not be dribbled again. The ball hold after dribble needs compulsarily necessarily to be passed. Or if a player is near the board he can shoot it. The dribbling is to be done with one hand only. While dribbling one has to keep the eye-sight in the front.

**Types of Dribbling :**

**(a) Low dribble, (B) High dribble**

**(i) Low dribble :** In this type of dribbling the ball is kept at the height lower than the knee and then dribbled. In low dribble one can keep control over the ball. Generally, when any player of the opposite team comes nearer to the dribbler, he can be dodged another side keeping the control over the ball.

**(ii) High dribble :** In high dribble, mostly the ball remains at the height above the waist. To get this height, the ball is needed to be collided with the ground with more power. To travel with speedy motion one has to use skill of high dribble. But, while doing high dribble if one is inattentive, the opposite player can easily snatch away the ball.



**High Dribble**

**(3) Shooting :** During the game of basketball, the skill of throwing the ball in the ring basket from different places in different situations is called shooting. In the game of basketball, getting the victory depends upon more number of baskets and more number of baskets depend upon the perfect and successful shooting in the ring. Shooting is done in two ways :

- (a) Shooting without support (Straight shooting)
- (b) Shooting with support of the board (Assisted shooting)

(i) **Straight Shooting :** In straight shooting the ball is passing through the ring without any support whatsoever.

(ii) **Assisted shooting :** In this type of shooting the ball is being passed through the ring, after being collided with the board.

(4) **Lay - up shot :** With dribbling when a player comes near the board and collides the ball with the board to shoot is called lay-up shot. In lay-up shot, when a player is little away from the board shall stop dribbling and catch the ball when his right or left leg is on the ground and in motion he shall take a long step with any of the legs and shall jump high and shall extend the shooting hand from the elbow and shall collide the ball in the rectangle drawn on the board, slowly. The ball collided thus mostly passes through the ring. After the lay-up shot, the player shall land on the ground on both of his legs.

**(5) Set Shot :**

There are two types of set-shot :

- i. One hand set shot :
- ii. Two hand set shot :

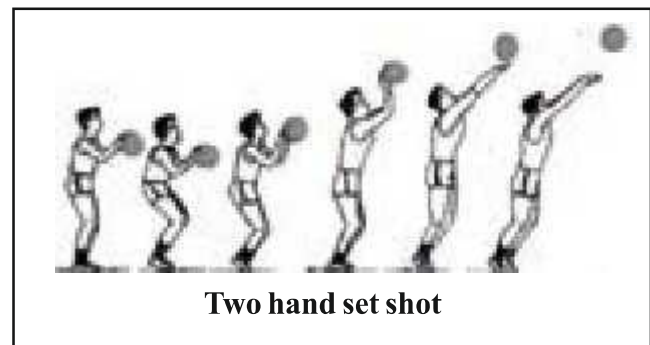
(i) **One hand set shot :** A player shooting with right hand shall keep his right leg in the front. As shown in the picture the palm of the right hand shall face the ring, and the palm of the left hand shall remain in touch with the ball to support it. Then the right hand shall be extended toward the ring. When the hand becomes straight the ball shall be thrown toward the ring with a push of the wrist and the fingers. When the ball is released from the right hand its palm shall remain toward the ground.



Shooting can be done differently as follows :

- (I) To shoot, bringing the ball in front of shoulder.
- (II) To shoot, bringing the ball over the head.
- (III) To shoot, bringing the ball over the shoulder and on the side of the head.

(ii) **Two hand set shot :** This skill is used to shoot from the far distance. Initially a player shall hold the ball coming in the basic position. He shall bring both the wrists downward along with ball. Then he shall extend his hand above from the front of the forehead. Making the hands straight, he shall make the legs straight from the knees and shall rest the body on the toes of the legs, and shall push the ball towards the ring with the help of the wrists and the palms. The ball shall go towards the ring with speed. After the release of the ball the palms of the hand shall remain sideward and near to each other.



**Individual practice :**

The game of basketball is such, in which one can have individual practice. Such practice can be done effectively for the following skills :



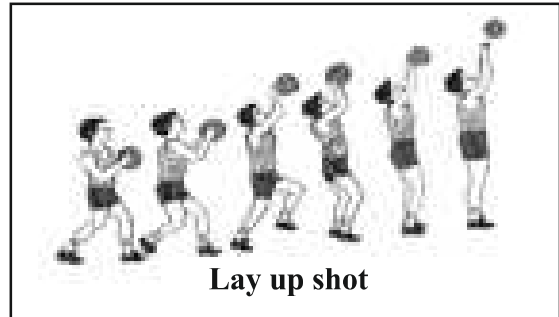
- (a) Dribbling practice                      (b) Shooting practice.  
 (c) Lay up shot practice.                (d) Set shot practice.

**(i) Dribbling practice :** In dribbling practice a player can dribble high and low. Practice can be done with slow speed and high speed. While practising one can abruptly stop and immediately can go ahead. The time limit can be framed out by experience to achieve required physical fitness. If need be, one can keep on dribbling standing at one spot.

**(ii) Shooting practice :** Shooting can be done from any distance and any spot in the ground. For perfection one can fix the numbers of shooting and can note as to how many shots were successful.

**(iii) Lay up shot practice :**

In this skill dribbling, jumping and shooting actions are included. The practice of lay up shot can be done with slow speed in the beginning and can be increased at the latter stage. It can be performed from the front of the board, from the right side or from the left side of the board. While shooting if the ball collides with the board and does not pass through the ring, one should try to collect the ball to try it again.



**(iv) Set shot practice :**

Set shot can be done with one hand and also with two hands. The practice of this shot can be done in three ways: (i) bringing the ball in front of the shoulder, (ii) bringing the ball over the head and (iii) bringing the ball over the head and on it's side.

For long distance shooting two hands set shot should be used. This skill can be performed from the front of the board, from any direction and from any distance.

**Team practice :**

If one wants to practise in a team, there should be two teams consisting of 5 players in each team. To get mastery over team practice, the teams should play the games for different time limits. In the beginning they can have two halves for 5 minutes each, Then they can play two halves for 10 minutes each and ultimately for 20 minutes each.

For team practice inter class competitions and friendly matches can be arranged. At school level and college level such practices of the games can be arranged for boys and girls both.

**Rules the of game :**

(1) Every team of basket ball game comprises of total 12 players including 5 playing players and 7 substitutes.

(2) Dribbling can be done with one hand only. After stopping doing the dribbling, it cannot be done again.

(3) If there is a foul, intentional foul or the technical foul during the shooting, the opposite team shall be given free throw.

(4) **Free throw :** Free throw is done from the free throw line of the opposite team. In this throw, if the thrower commits a foul and there is a basket, it shall be considered cancelled. If opposite team commits a foul and theres is a basket, it shall be considered as a basket, but if there is no basket, the free thrower shall be given the chance again. If in the second chance there is a basket then the team who score basket shall get one point.

(5) **Three second rule :** Any player of the team having the control over the ball cannot stay for more than three seconds in the restricted area of the opposite team. For this foul the opposite team is given side line throw.

(6) **Five second rule :** For side line throw and for free throw five seconds are given. For taking more than five second's foul the opposite team is given side line throw.

(7) **Eight second rule :** After getting the control over the ball, the team needs to take it in the opposite side ground within 8 seconds. If this is not done, the opposite team is given side line throw for this foul.

(8) **Twenty four second rule :** No team can play the ball continuously for more than twenty four seconds without shooting. During this time limit that team needs to shoot at least once.

(9) **Start of game :** The referee can start the game by tossing the ball inbetween the teams, from the centre circle of the ground. The start of each half time and the additional time also shall be done by the referee in the same manner.

(10) **Basket or goal :** During the game, when a ball passes through the ring from over the upper side of the ring, it is considered as a basket or a goal. During the game, two points are given for a basket. Three points are given for the basket done from the outside of the three point area. For free throw one point is given.

(11) **Substitution :** substitution can be done, when the ball is dead.

(12) **Held ball :** During the game, when the players of both the teams keep their one or two hands over the ball for five seconds, the umpire shall declare it as held ball. In this situation the side line throw is given in succession.

(13) **Back - court pass :** Once getting the control over the ball in front court, it (ball) cannot be taken in the back court.

(14) **Personal foul :** When a player touches the opposite team's player and tries to obstruct the motion, he is given personal foul. Such a foul is noted against that player. In this situation the opposite team is given side line throw.

(15) **Double foul :** When the players of both the teams commit the fouls at a time, it is a double foul. For this foul side line throw is given.

(16) **Intentional foul :** During the game, when a player commits a serious foul intentionally, it is called intentional foul. For such foul a player can be removed from the play.

(17) **Rule of five personal fouls :** During the game when any player commits five personal fouls, he is removed from the play.

(18) **To start the game:** There should be five players in both the teams.

(19) In the game of basket ball the time of one inning is 10 minutes. In the game 4 such innings are to be played. Inbetween two innings 2 minutes rest is given and in the half time (after two innings) 15 minutes rest is given. The timing shall be like  $(10+2+10) + 15 + (10+2+10)$ .

(20) At the end of the game of 40 minutes, the team which gets more points, shall be the winner.

(21) **When there is a tie :** At the end of the game if both the teams have scored equal points, additional 5 minutes timing or such more innings shall be given till the result is achieved. Inbetween additional innings 2 minutes rest shall be given.

(22) In the game of basketball there shall be one referee, one umpire, one time keeper, one scorer and one 24 second operator.

### Exercise

#### 1. Answer the following questions.

- (1) Explain two hand chest pass skill of basket ball
- (2) Explain two hand bounce pass skill of basket ball

- (3) Explain one hand under hand pass skill of basket ball.
- (4) Explain dribbling skill of basket ball.
- (5) Explain shooting skill of basket ball.
- (6) Explain lay up shot skill of basket ball.
- (7) Explain two hand set shot skill of basket ball.

**2. Answer the following questions in short :**

- (1) Difference between low dribble and high dribble.
- (2) Difference between straight shooting and assisted shooting.
- (3) Explain one hand set shot skill.
- (4) Explain individual practice.
- (5) Explain team practice.
- (6) Explain the rule of 24 seconds of basket ball.
- (7) Explain held ball of basket ball.
- (8) Explain the rule of intentional foul of basketball.

**3. Answers to the following questions by selecting correct option from the options given below.**

- (1) In which year was the game of basket ball invented. ?  
 (A) 1841                      (B) 1851                      (C) 1861                      (D) 1871.
- (2) What was the name of the inventor of the game of basketball ?  
 (A) H. C. Buck                      (B) Baron D. Kubertin  
 (C) Dr. Jems Neysmith                      (D) Jems William
- (3) In which year were the rules of the game of basketball as international game were formulated ?  
 (A) 1874                      (B) 1884                      (C) 1894                      (D) 1904.
- (4) Where was the first world basketball championship was organized ?  
 (A) Japan                      (B) Germany                      (C) Russia                      (D) America.
- (5) In which year was the international basketball federation was established ?  
 (A) 1931                      (B) 1932                      (C) 1933                      (D) 1934.
- (6) In which year was the first international basket ball competition organized in the World Olympic Games ?  
 (A) 1936                      (B) 1948                      (C) 1952                      (D) 1932.
- (7) Who had tried to popularize the game of basket ball in India ?  
 (A) Charles Koriya                      (B) Charls Dickens                      (C) Charls Peterson                      (D) Charls Williams
- (8) In which year was Basketball Federation of India established ?  
 (A) 1948                      (B) 1949                      (C) 1950                      (D) 1951.
- (9) What is the length - width of the ground of basketball ?  
 (A) 25 m × 15 m                      (B) 27m × 15m                      (C) 28 m × 15 m                      (D) 29 m × 15 m.

- (10) What is the length - width of the basketball board ?  
(A)  $1.50\text{ m} \times 1.20\text{ m}$       (B)  $1.60\text{ m} \times 1.20\text{ m}$     (C)  $1.70\text{ m} \times 1.20\text{ m}$     (D)  $1.80\text{ m} \times 1.05\text{ m}$ .
- (11) What should be the weight of the ball of basket ball ?  
(A) 600 gm to 650 gm      (B) 625 gm to 650 gm (C) 625 gm to 630 gm (D) 610 to 630 gm.
- (12) What should be the circumference of the ball of basketball ?  
(A) 70 cm to 73 cm      (B) 73 cm to 78 cm    (C) 75 cm to 78 cm      (D) 77 cm to 79 cm
- (13) How many playing players and the substitutes are there in the game of basket ball ?  
(A) 7 and 5                      (B) 5 and 5                      (C) 5 and 7                      (D) 7 and 7
- (14) The player of the team, which has the possession of the ball for how many second he cannot stay in the restricted area of the opposite team ?  
(A) 5 seconds                      (B) 8 seconds                      (C) 3 seconds                      (D) 10 seconds.
- (15) After getting the control over the ball, in how many seconds, the team has to take the ball in the opposite court ?  
(A) 5 seconds                      (B) 8 seconds                      (C) 10 seconds                      (D) 12 seconds
-

Hand ball is a ball game. As the hand is used more in this game, it is called hand ball. It is mentioned that in 600 B. C. a game similar to the modern hand ball was played in Athens. In the latter half of the 19th century this game was played in Germany, its credit goes to the German gymnast coach master Conrad (1890 A. D.). In beginning as this game was not so popular, it was controlled by the International Amateur Athletic Federation. Gradually, this game became popular and on 4th August 1928 A. D. during Amsterdam Olympic Games, for the control and development of the game, an organizational board was established, in the year 1946 and known as the International Handball Federation. Men's Handball was introduced in the 1936 Berlin Olympics for the first time, and Germany became champion which was won by Germany. But, after that this game was not played in Olympics. In 1972 Munich Olympics, men's Hand ball was reintroduced. Women Handball was added in 1976 Montreal Olympics. Countries like Germany, Russia, Yugoslavia, Croatia, Spain, France, Egypt, Switzerland etc. have always dominated the men's Hand ball, while in women's handball countries like Denmark, Norway, China, Germany, Angola and U.S.A. are leading.

## Yoga, Health and Physical education, Std 10

As shown in the figure the hand ball court is rectangle in shape. It is 40 metres in length and 20 metres in width. The 40 metre line is called 'side line' while 20 metres line is called as a 'goal line'. A 20 meters long line is drawn in the middle so as to divide the ground in two equal parts. This parallel line, to the goal line is known as 'centre line'. Except the middle line between two goal posts all the lines on the ground area 5 centimetre wide, while the line between two goal posts in 8 centimetres in width.

The surface of the ground is even, dust free and hard. The indoor ground is wooden made from such synthetic material which will not cause injury or slippery.

### **The ground sector lines and its measurements**

#### **(1) Goal posts :**

The goal posts are kept in such way that back side of goal posts touches the goal line at back and each goal post is at the center of the goal line at the distance of 3 metres. A 3 metres long pole is kept across on the two standing poles at such height so that the inside measurement is 3 metres x 2 metres. Poles are 8 centimetre wide and 8 centimeter thick. The poles are coloured with different colours like white & black or white & red. At the joining area across & down poles of 28 centimetre part is colored with dark color. After leaving 20 centimetre space then it is colored black and white or white and red bands one by one. The goal posts should be made of hard material, hard wood, light metal or other synthetic material. The net is tied in such a way that the ball thrown in net remains in it only instead of bouncing back.

#### **(2) Goal area :**

A line parallel to the goal line but 6 metres away, 3 metres long line is drawn from goal post on the inside part of ground in front of each goal post. Taking 6 metres radius a semicircle is drawn from the goal line taking the goal posts at centre, this 6 metres away line from the goal is called a goal area.

#### **(3) Free throw line :**

Taking the goal post as center 9 metres radius line is drawn on both the sides, 3 metres long, parallel to the goal area are joined at the end. This 9 metre distance from goal line is drawn as a arc with 15 centimetre gaps (dotted line). It is known as free throw line.

#### **(4) Penalty line :**

A one metre long parallel to the goal line 7 metres away from the goal line is drawn inside the ground towards the middle line on both the sides. It is known as penalty line or '7 metres line.'

#### **(5) Goal keeper's restraining line :**

Goal keeper's boarder line is 15 centimetre long in the middle side lines and 4 metre away from the goal line, but parallel to it.

#### **(6) Place for substitutions :**

A 15 centimetre long and 15 centimetre outside and at the distacne 4.45 metre line from the middle of sideline is drawn near the scorer and time keeper. This area is used for the substitute players to enter the ground or for the in play player to come out.



**Ball :** The upper part of the ball is of leather, rubber or synthetic material (which does not cause injury) and it should be of one colour. The surface of the ball should not be shined or smoother to slip away.

The circumference of the ball shall be 58 to 60 cms and weight 425 to 475 gms. For boys, for girls the circumference of the ball shall be 54 to 56 cms and weight 325 gms to 400 gms,

### **Equipment for game :**

Ball, net, stop watch, score sheets, green card, yellow card, red card, (Each card should be 9 x 12 centimetre).

### **Skills of Hand ball :**

To improve the hand ball game or to get the command over the game following skills to be needed:

(1) Throwing, (2) Passing, (3) Catching, (4) Shooting, (5) Goal keeping, (6) Defence & attack.

#### **(1) Throwing :**

The releasing of ball in the game from various places in the ground according to the requirement with one hand (with two hands if required) to the team mates for doing a goal is called as throwing. It is essential to have strong wrist, elbow and shoulder joints for effective and good throw. If a player knows from which place at what height and with what force the ball should be thrown and if he decides quickly and acts accordingly, then throwing is effective. If there is a slight error in throwing the aim or throw is not fulfilled and the ball goes in the control of opponent team.

Throwing is mainly done in 4 different situations : (a) Throw - off (b) Throw - in (c) Penalty throw (d) Free throw

**(a) Throw - off:** The game begins with throw off. The team which wins the toss chooses the ground or throw-off. Throw-off can be taken on either direction of the ground from the middle line. After the referee blows the whistle, the ball is passed to another player by throw-off. After each goal opponent team restarts the game by throw-off, from the middle line of ground. In second half the game starts with the throw-off by the side other than the one who began the game. When the throw-off is taken all the players should be at least at the distance of 3 metre from the throw-off player.

**(b) Throw - in:** During the game the ball goes out of the touch line (sideline), and then throw-in is given to the team other than the team's player through whom the ball had gone out. The player who is doing the throw-in takes the position from where the ball has gone out; his one leg should be on the sideline and another leg a step behind it. The ball is to be thrown with the opposite hand of front leg, with the body weight being brought to front leg from the back leg the hand with the ball is brought ahead from shoulder or head. To the ball is released his face should be towards the ground and his leg should be in touch with the side line.

**(c) Penalty Throw:** When during the game the defence team intentionally comes inbetween the direct goal opportunity then the attacking team gets the penalty throw. The penalty throw player will stand 7 meter away not touching the penalty line and keep his strong leg behind it and his other leg



**Penalty Throw**

behind the front leg according to his convenience. His strong arm (the one opposite to the front leg) will throw the ball bringing his back stretched hard with ball above the head the body weight is on the back leg. For throw quickly the back leg is brought ahead and body weight is shifted to the front leg. The hand with the ball is brought ahead in front with complete wrist power and the ball is shot for goal.

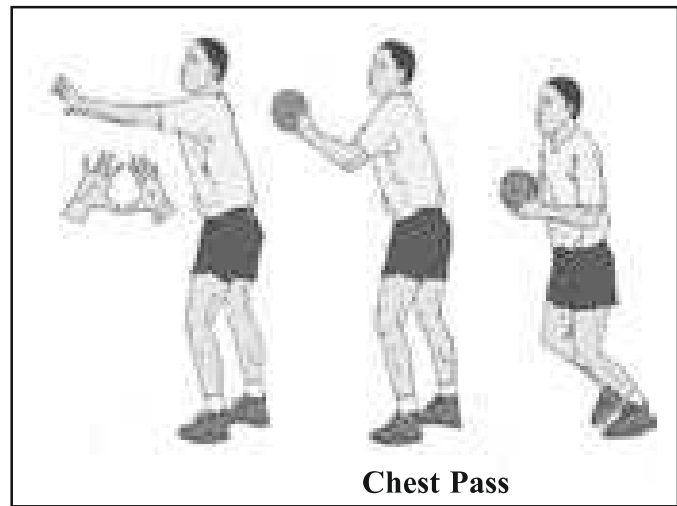
**(d) Free Throw:** When during the game the defence player gets the ball from opponent against the law (rule) or tries to take the ball away from attacker in wrong way, then attacking team gets a 'free throw'. Free throw is done from the 9 metre line. When free throw is taken all the players should be out of the 9 metre line (behind) excepting the goal keeper. The free throw player will also stand behind the 9 metre line and he will pass the ball to his teammates or shoot for the goal. When it is free throw, then there should be distance of 3 metre between the free thrower and the defence players.

## (2) Passing :

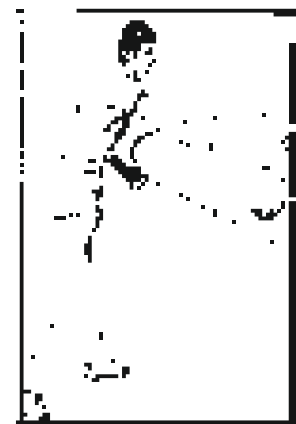
The process of giving the ball to other team mates is called as passing. It is necessary for the players of the team to play with co-operation & cleverly in the hand ball. Passing skill is very important in the situation like to take is done with ball ahead quickly, to break the cover when caught in it. According to need and the passing is done with different kinds. The passing techniques, are given as follows:

**(a) Chest Pass :** During the play if the team mate is very near (2 to 3 metre) and there is no opponent player present inbetween then Chest pass is done. Chest pass is done through one hand or both hands. The two legs are normally apart or are kept a little back - front to stand. The ball is hold by keeping the fingers apart from back side. For passing the ball the

body weight is shifted ahead with both hands are straightened from elbow and with jerk so that the ball is passed to the team-mate at chest height. The balance is maintained by keeping the back leg in front. For passing with single hand, the ball is held with the fingers apart of stronger hand keeping back palm is near the chest and supporting the ball with other hand. The back leg is brought forward and with strong hand jerk the ball is passed to the team mate at chest height.



**(b) Bounce Pass :** When the own team player is near, and opponent player is in between and that time for attacking no other pass can be done then bounce pass is made. It is same as chest pass, only it is make sure that in this pass the ball bounces at the feet of the opponent player on the ground and reaches the team mate (see the figure). Instead of both hands parallel to the ground one or both the hands are stretched in the direction, where the ball is going to bounce and the pass is completed.



**(c) Wrist Pass :** In the game to pass the ball quickly to own team player for attacking this passing is used.

In Comparision to the other passes the ball is returned quickly in this pass by doing force from the strong wrist. Wrist pass is done by moving one/ two steps on sides. The legs should be front-back and slight apart. The strong hand is lightly brought

**Bounce Pass**

in side with a jerk; the ball is passed above waist and parallel to chest height of the opponent with straight hand. While passing, the opponent is kept in sight.

**(d) Overhead Pass :** When an opponent is in between the ball passer and his team-mates, then chest pass or wrist pass cannot be performed given, then overhead pass is made. The legs are apart and front-back and the hand through which the pass is to be done is stretched outside from the shoulder and the ball is thrown over the head.

**(e) Push Pass :** In this type of pass the process is same as chest pass. The ball is hold half from back with both hands, straightening the arms from elbow and the ball is thrown to other player with a push.

### **(3) Catching or Ball-receiving :**

In the hand ball catching is as important as throwing (passing). If the ball is not caught properly or if he fails to catch, even a good pass is but does not get the good result.

While catching the catcher's body should be under full control so that after catching also his body is balanced so that he can quickly release or throw the ball after catching. To catch the ball the player has to emphasis on following points :

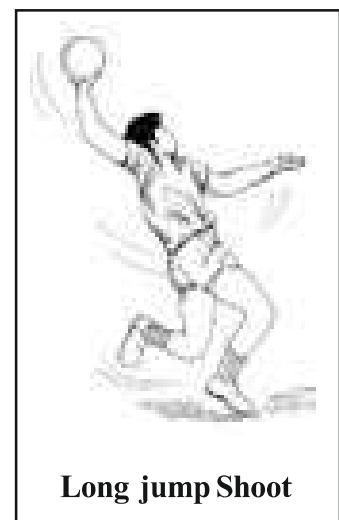
- (1) To presume the ball coming from at what distance and speed.
- (2) Instead of waiting for the ball to come, go forward and catch it.
- (3) To stretch both the hands, both the wrists joint, fingers open and wide eyes on ball and opponent also.
- (4) As soon as the ball touches the hand grip, it tightly fold hand from elbow in direction of movement so that the injury is less and the ball does not bounce back.
- (5) Overhead ball should be caught at height and landing on one leg or both legs on toes by flexing from knee and maintain the balance.
- (6) After catching, the next process is to be done quickly balance.

### **(4) Shooting :**

In the hand ball game in given time the team getting more points is declared winner. The points depend on the goal and the shooting is important for goal. The skill of throwing the ball in the goal post from the out of goal area is called shooting. The goal mainly depends on shooting thus in hand ball game each player has to master over the shooting Skill with Shooting can be done by one or two hands. Mostly the player comes with dribbling for shooting. He takes one, two, three, steps before the 9 metres line and then he shoots. During shooting stronger leg forward and the ball should be opposite to the stronger hand. By taking last step the player goes high in air with taking long jump. At time the ball is taken back and then with full force it is brought forward and before touching the leg down on the ground, the ball is shot. Shooting is done in various ways as follows.

#### **(a) Long jump Shoot :**

This is a very important shooting skill because it can be done from all different angles and areas of ground, the body motion is used fully and the opponents can be dodged easily, so the chances of making goal are very high.



When there is space between the defenders by taking the last step with strong leg of in the air the attacker jumps once, twice or thrice according to his convenience takes his body towards the goal post bending on strong hand side. The body is kept little forward bend as shown in figure. The hand with the ball is stretched at back side. At the maximum height the hand is brought forward from the shoulder side, keeping the goal keeper in mind he shoots the goal with full force. This whole action is to be done continuous and with maximum speed. After the release of the ball, landing on the strong feet, knees slightly bent, and maintain the balance by keeping both the hands forward.

### **(b) High jump shoot :**

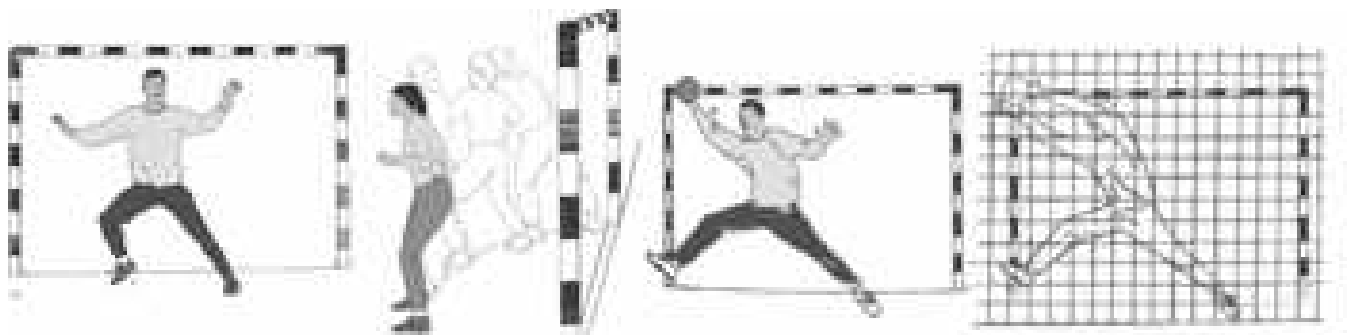
When the defence techniques of defence team are strong, long jump or any other shoot cannot be done then high jump shoot is very effective. Tall players are master over this skill. High jump shoot is done from 9 metre's line by taking high jump during the play.

When the player is near the 9 metres line he shoots the ball with his strong hand and towards the goal post from his maximum height and lands on the his toes. Knees bent a little and balance is maintained with both the hands kept forward.

### **(c) Fall Shoot :**

During play when the attacking player is near the 6 metres line and alone but there is no chance of shooting by taking steps, then he shoots the goal through 'Fall Shoot'. Mostly this skill is used by pivot player. When the defenders are near the 6 metres line to protect the attacker and pivot player of his team is alone and suddenly he gets the ball through pass, he quickly makes a goal through fall shoot skill. While making a goal he takes a high jump from ground, bends his body towards the goal post and shoots. His both palms land first on the ground then slowly his feet come to ground. Body weight will be on toes of hands and legs.

### **(5) Goal keeping :**



**Figure Goal keeping**

As much a shooting skill is important in goal, so is the goal keeping to prevent the goal.

Goal keeper must always be ready as sturdy wall in the goal post. Goal keeper can stop ball with the leg in the goal area, but stopping the ball with hand is more beneficial. The eyes of goal keeper should always be on the ball and shooter's hand.

He should move his legs quickly towards the side the ball is coming. The goal keeper has to keep in mind that he has to cover most part of the goal post and stop the ball with any of his body part. The goal keeper should throw the ball without delay and quickly to his team after stopping it. The action of hands and legs of goal keeper are speedy and agile.

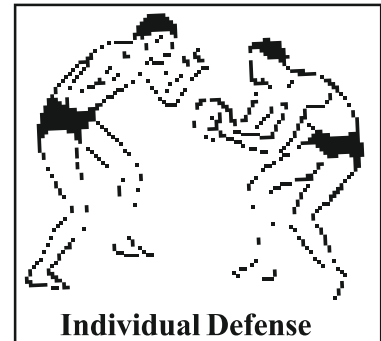
**(6) Defence & offence:**

Each team adopts different tactics, skills, strategies to have good command on the game and to bring win to their team. These tactics are : (a) Defence and (b) Offence. These both tactics are simultaneously applied during the game. Here we will understand both the tactics one by one

**(a) Defence :** There are two ways of defence against the opponents : (i) Individual Defence. (ii) Team Defence.

**(i) Individual Defence :**

Trying to stop the offender who is moving ahead with ball to make dribble or pass ineffective, to prevent the shoot or goal when defender tries to obstruct under the rules, it is called individual defense. Here each team player is defending against each offender of opponent side, so it is called 'man to man' defence. In the individual defence the player will follow his given opponent wherever he goes on the ground. An individual defender has to keep watch on the given opponent's place on ground, he is with or without ball, he has dribbled or not, his legs movement, eyes, shoulder sign etc. He has to keep his legs apart one hand-up towards the head and other hand straight on side and change the hands periodically. Bring the upper hand down and lower hand up. Defender players moves one leg and other leg also in the direction as the moved by offender. Thus the defender has to move in the direction, where the offender is moving by walking or dragging instead of jumping and change his place.

**(ii) Team Defence :**

In this defence all the court players (defenders) together defend against the offender of opposition team so it is called team defence or collective defence. In this the defending team makes a zone by arranging all their players in a definite shape near the 9 metre line. Thus this defence is also called as Zone Defence tactics. In the team defence, more concentration will be on the place of the ball. The defenders try to fail the attack by changing their position with less movement, maintaining attacking and going towards the direction of the offender who is leading to shoot.

**(b) Offence :** It is essented to win the handball game and to make more points than the opponents, the players of teams are so capable and efficient to use of various tactics according to the situation and need for attacking various methods of attacking are as follows:

**(i) Fast Break :** During the play when the opponent player comes near 9 metres line to shoot and if the ball by taping or hitting the goal post and bounces back to the player then he quickly, swiftly dribbles the ball and shoots it in the goal post. This fast break technique is more famillar. The ball is passed to the player who is near 9 metres line or dribbled and shoots it for the goal before the opponents come back to their court.

**(ii) Two Men Pass & Shoot :** When the offensive team has shot the ball, but if it has been stopped by the goal keeper or it has hit the goal post, the ball is passed to the player. Two players running parallel to the side line on both sidelines, they pass ball to each other and near the 9 metre line, whoever finds it convenient shoots the ball. Seeing the speed and movement of receiving player, the ball is passed in such way that the player gets the ball ahead of him.

**Rules of Hand Ball :**

(1) Each team has 12 players, 7 players are in play, while 5 players are substitutes and sit in the substitution area outside the ground. From the 7 players 6 will be as court players and one will be on goal keeper. The dress of all players is same, while goal keeper's dress is different.



(2) When starting, each team should have at least 5 players in which one is the goal keeper on the ground. During play the number of players in one team should not exceed 12.

(3) The game starts with the toss. The toss winner choose the ground or Throw off.

(4) Time : For above 16 years men and women, the play time is 30 minutes for each half (30-10-30 minutes). There is a break of 10 minutes between two half times. Both teams are agreed and if referee permits then the break period can be reduced.

(5) The game starts with the throw off from middle line after the referee's whistle. At this time all the players should be present on their half ground. The throw off players should be at least 3 metre away from his opponents.

(6) After break, and before the start of second half the ground is to be exchanged and will get the throw of the other team than the team which started the earlier.

(7) At the end of the time the team having more goals will be declared the winner. If at the end of the game period both teams have the same goals, then to decide the winner two halves of 5 minutes will be given with a break of 1 minute between these two halves. After the half time the ground will be changed. Also, for the tie breaker, a coin is tossed before the first half and start is through throw off. If after extra time also, the points are same, then two more extra half-time of 5 minutes each is played after a break of 5 minutes.

(8) If the ball passes under the cross bar between the goal pole then goal will be considered.

(9) In the goal area, only goal keeper will be present, If the court player enters then it can be considered as foul.

(10) The player can play ball in any direction, through any body part, that is: head, hand thigh, and knee. But if the ball touches any part lower than the knee then it will be considered as foul.

(11) A player can hold the ball maximum for 3 seconds.

(12) A player can hold the ball for maximum 3 steps.

(13) Any court player can play as a goal keeper and goal keeper can play as a court player. But it has to be informed to the scorer, Referee and he has to change the dress.

(14) If the ball cross the end line of the ground then opponent will be given 'throw in'.

(15) When the ball crosses the goal line and goes out of the ground then goal throw will be given.

(16) The goal keeper cannot play the ball till any other player touches the ball after the goal throw.

(17) Penalty throw or '7 metres throw' will be given in following situations:

(a) When the ball has been stopped by illegal in any placed of the ground in the process of goal.

(b) If the offender has a ball and the defender court player enters the goal area to get benefit.



- (c) When the court player intentionally throws the ball to the goal keeper in the goal area. Penalty throw is taken within 3 seconds of the referee's signal.

(18) No player can play the ball till the ball touches goal post or goal keeper after penalty throw.

(19) At the time of penalty all the players of defenders should be at least 3 metres away from the penalty throw player. If the defender crosses the free throw line, before the penalty throw is taken, then it is considered a foul and for that the following decision will be taken :

(a) If the goal has gone into the goal post, it will be goal.

(b) And if does not make goal then penalty throw will be given again.

(20) If the goal keeper crosses the 4 metres line before the release of the ball, then it is a foul. In this situation if it is goal then goal will be considered but if goal dose not make than penalty throw will be given again.

(21) If there is foul by both the teams at same time, then referee gives the "referee throw". The court referee plays the ball from the corner where the foul was done by bouncing it on ground. No player can be stand within 3 metres near the referee. No player can play till the ball touches the ground. If any player commits a foul than the opponents get free throw.

### **Hand Ball Game's Referee .**

The refrees of handball are as follows :

- (1) Two main Referees
- (2) One score keeper
- (3) One time keeper.

### **Exercise**

#### **1. Explain the following skills**

- (1) Throw off
- (2) Throw - in
- (3) Individual defence
- (4) Free throw

#### **2. Answer the following questions in one or two sentences.**

- (1) What is the time period for above 16 years for girls ?
- (2) What are the choices to be selected by for the toss winning team at the start of the game ?

(3) Who will take the throw off for the start of second half in Hand ball ?

(4) When is the referee throw will be given in hand ball ?

**3. Write answers to the following questions by selecting correct option from the options given below.**

(1) What is the length of goal line in Hand ball ?

(A) 20 metres                      (B) 25 metres                      (C) 30 metres                      (D) 40 metres.

(2) What is the circumference of the ball for men in Hand ball ?

(A) 48 to 50 centimetres                      (B) 54 to 56 centimetres  
(C) 58 to 60 centimetres.                      (D) 64 to 66 centimetres.

(3) What is the weight of the ball in Hand ball for women ?

(A) 225 to 270 grams                      (B) 270 to 295 grams  
(C) 295 to 325 gms                      (D) 325 to 400 grams

(4) How is the Hand ball game started ?

(A) Throw off                      (B) Penalty throw                      (C) Throw - in                      (D) Free throw.



## 14

## Volley ball

Volley ball is an International game which is played in open air ground and in gymnasium (indoor hall). Volley ball game was invented in 1895 by Prof. William G. Morgan. This game is developed by Y.M.C.A. Institute.

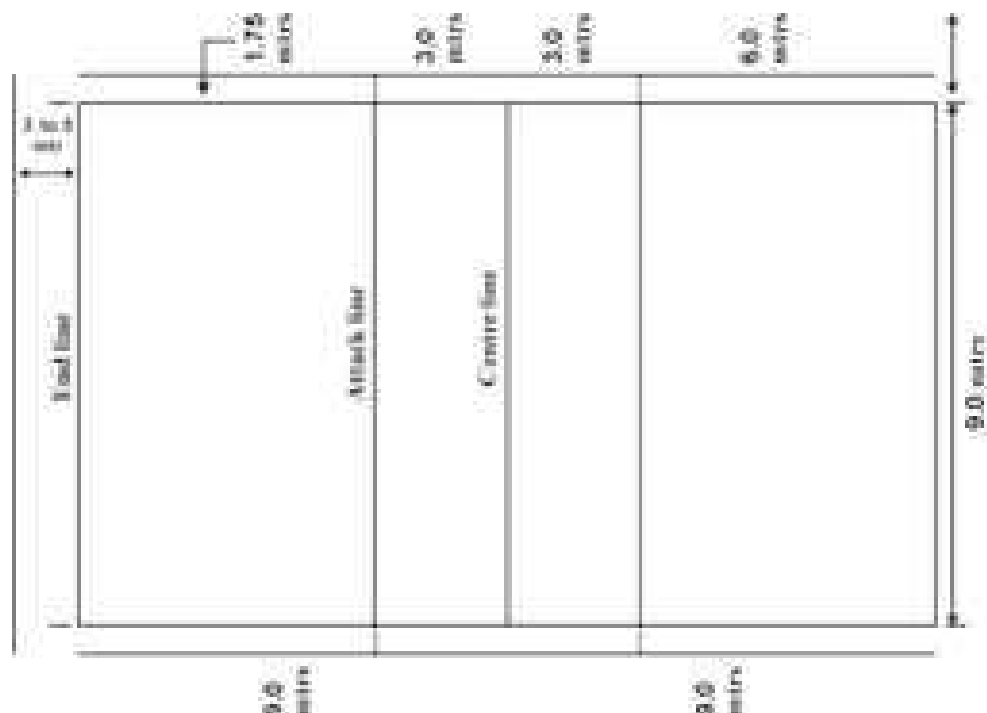
This game was started at general level in America, which was developed very fast at International level. During Barlin Olympic demonstration of game was organized in 1936. This game was officially included in Olympic games at Tokyo (Japan) in 1964.

The volley ball game was started in India by Y.M.C.A. National Volley ball federation was formed in 1950. Asian volley ball federation was established in 1954. First Asian volley ball championship was held in Tokyo (Japan) in 1955. This championship was won by India. This game was officially included in third Asian game which was held at Tokyo during 1958.

Volley ball is also very much popular among boys & girls in Gujarat State. Various competitions are organized in cities and rural areas.

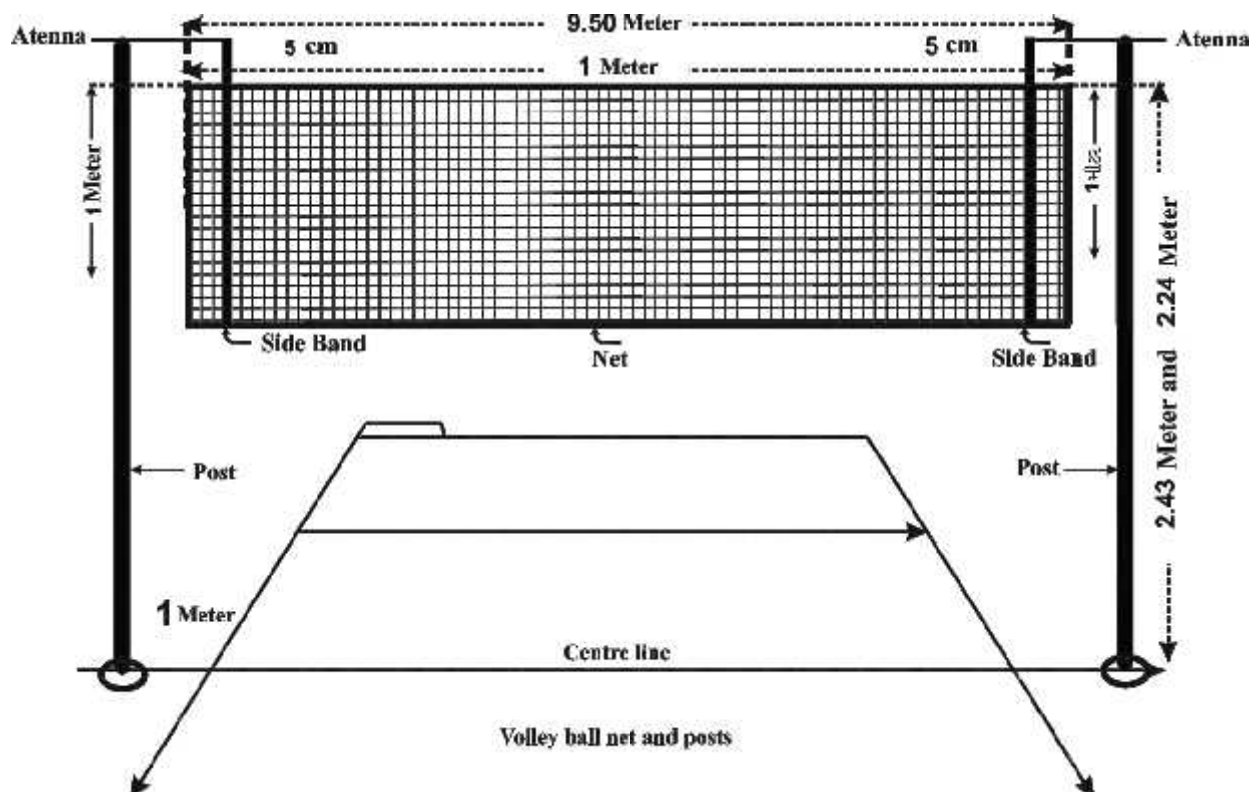
**Ground :**

- Volley ball ground is 18 metres long and 9 metres wide. The free playing space shall measure a minimum of 7 mtrs in height from the playing surface.
- All lines of ground are 5 cm wide and they are the part of ground.
- 5 cm wide line in the centre of court divides the playing court into two equal parts is called centre line.
- 3 mtrs away from the centre line 5 cm wide parallel to centre line in each side line drawn is called attack line. Space between attack line and center line is called attack zone. The attack line is extended 1.75 mtrs, from the side line.
- 20 cm away from the side lines 15 cm wide lines drawn both the side are called service zones.



**Equipments :**

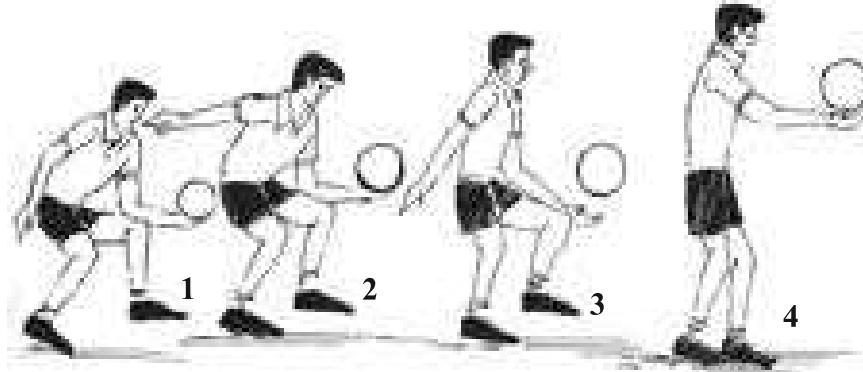
- **Posts :** The posts supporting the net are placed at a distance of 1.00 mtr outside the side lines. They are 2.55 mtrs high, round and smooth.
- **Net :** The net is 1m wide and 9.50 mtr long, made of 10cm squares. At its top there is a horizontal band, 5 cm wide, made of two fold white canvas shown along its full length. Each extreme end of the band has a hole, through which passes a cord fastening the band to the posts for keeping its top tight.
- **Side Bands :** Two white banners are fastened vertically to the net and placed directly above each side line. They are 5 cm wide and 1m long and are considered a part of the net.
- **Antenna:** An antenna is a flexible rod, 1.80 mtrs long and 10 mm in diameter, made of fibreglass or similar material. An antenna is fastened at the outer edge of each side band. The antenna are placed on both sides of the net. The top of each antenna extends 80 cm above the net and is marked with 10 cm stripes of contrast colours preferably red and white.
- **Cards :** Yellow, Red.
- **Height of the Net :** Height of the net for men is 2.43 mtrs and for women it is 2.24 mtrs.
- **Ball :** The ball shall be spherical, made of flexible leather or synthetic case with bladder inside, made of rubber or a similar material. 4 number ball is used in volley ball game. Its weight is 260 to 280 grams and its circumference is 65-67 cm.



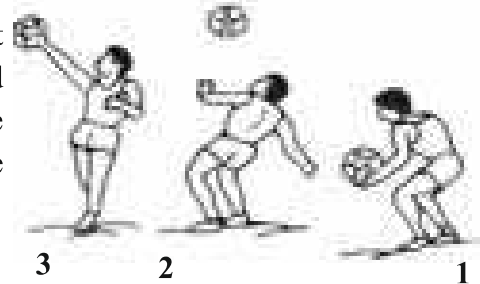
**Skills :**

**(1) Service :** Outside of end line of one's own court, a player tosses the ball up with one hand and sends it over the net of the opposite side court by hitting the ball with fist or any part of hand is called service. Following are the types of services.

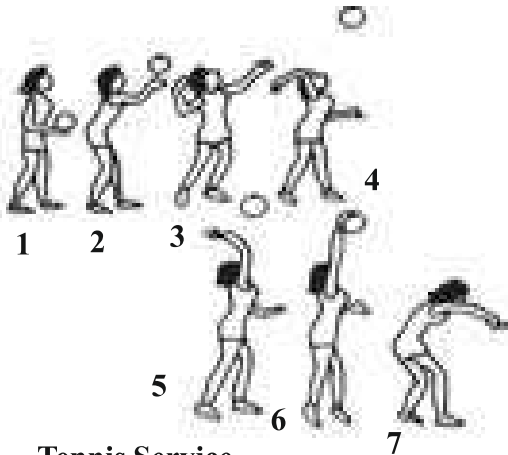
**(i) Simple Service (under hand service) :** Right handed player puts his left leg forward, tossing the ball near waist with left hand and swinging right hand backward to forward and hits the ball with base of palm of that hand and sends it from over the net to opposite side.



**(ii) Side arm service :** Right handed player puts left foot forward. Left shoulder should be in the direction of the net and in this position he tosses the ball upto his head level and as the ball comes down he abducts right hand sideward and hits the ball to send it over the net to the other side.



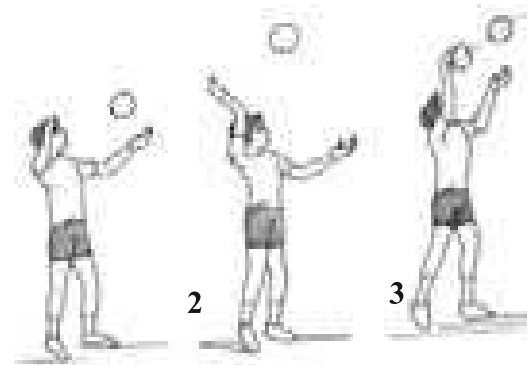
Side arm service



Tennis Service

**(iii) Tennis Service (Over head Service) :**

Right handed player tosses the ball higher than the level of his head by left hand then he over extends his right hand upward and behind the head and as the ball comes down to his head level he quickly smashes with the right hand forward and with the palm of his right hand sends it over the net to the opposite side.



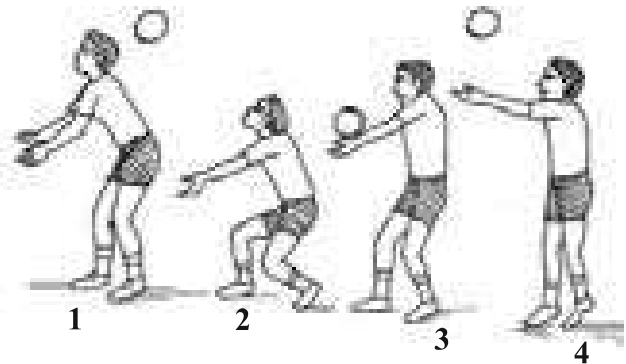
Floating service

**(iv) Floating service :**

In this service position of the body will be same as Tennis service, but while hitting the ball force should be given at the centre of the ball, to send to opposite court. After hitting the ball immediately hand should be pulled back. Force should be less so that there should not be any rotation in the ball.

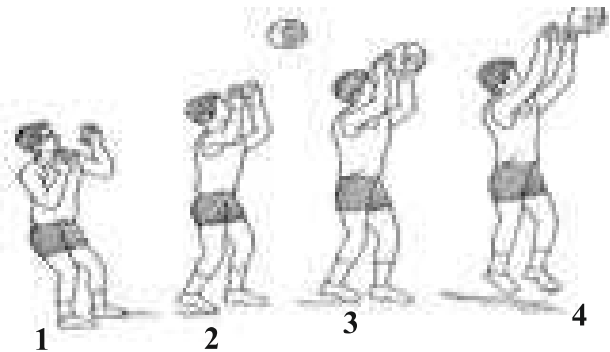
**(2) Passing :** After receiving the ball from the opposite side a player passes it to other player of his own team or opposite side by both hands is called passing. Following are the types of passing :

**(i) Two hands under hand pass :** During play, ball coming from opposite side below the waist level then this type of passing skill is used. In this pass player keeps ball side leg forward & both the legs are slightly bent from the knees or keeps both legs slightly open then bend palm over it, now keep both hands near the elbow & straight, then take hands forward, the ball and hit by forearm of both hands, and send it to their team mate or opposite side.



**Two hand under hand pass**

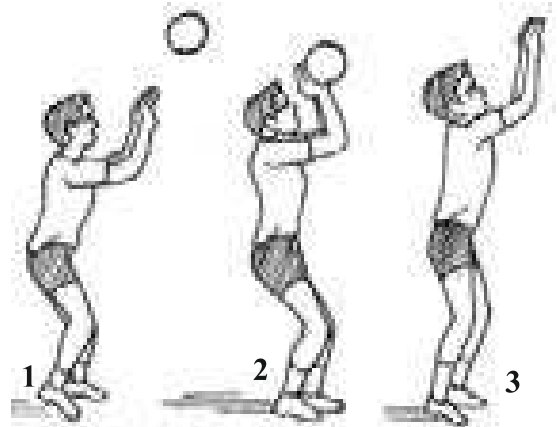
**(ii) Two hands over head pass :** When ball comes over the height of head, this type of passing is used. In this passing player keeps both legs slightly apart bending from the knees, waist is straight, keep thumbs towards the body and fingers are at side. Distance between fingers should be more than palms, when ball comes near the forehead, play with fingers of both the hands and send to his team-mates or opposite side.



**Two hand over head pass**

**(3) Lifting (Set up) :** In volley ball game when ball is set fairly high and close to the net for smashing is called lifting. Following are the types of lifting.

**(i) Simple set up :** In this type of set up player lifts the ball between him and smasher 25 cm to 35 cm high over the net. Then smasher takes one or two steps towards net and jumps to hit the ball forcefully to send to the opposite side.



**Simple set up**

**(ii) High set up :** The setter lifts the ball high over his own head near the net is called high set-up. In this set up player lifts the ball over the net approximately 1.25 to 1.50 mtrs high.

**(iii) Low Set up :** To get control over smashing and for fast play low set up is useful. Player lifts the ball about 15 to 20 cm over the net.

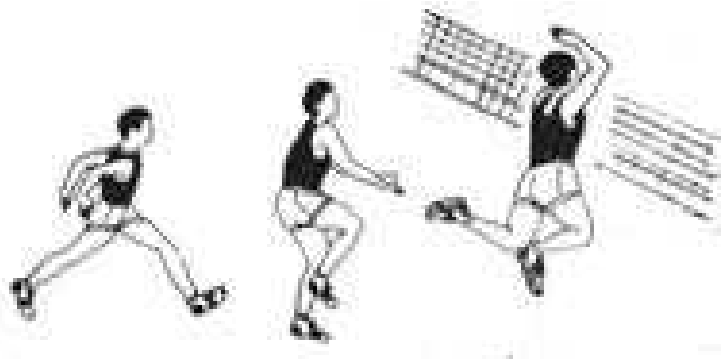
**(iv) Long set up :** Player lifts the ball from one pole to another pole and smasher hits the ball over the net and sends to opposite side.

**(v) Back set up :** As a part of tactics a player lifts the ball in front of him and sends it to his backside where smasher hits the ball to send it to opposite side.

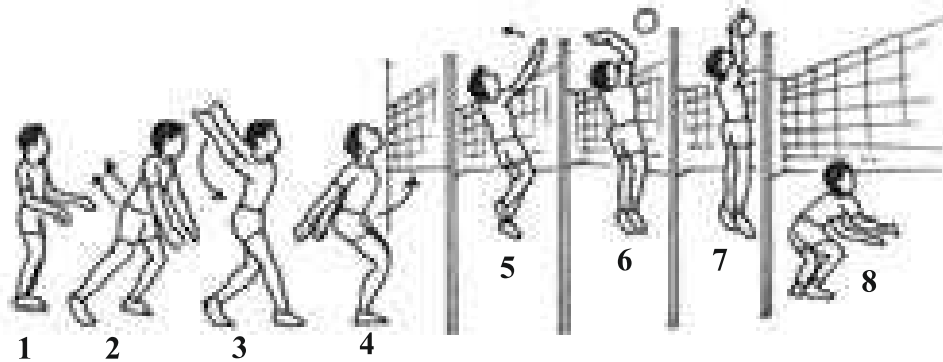


**(4) Smashing :** It means hitting the ball by one hand over the net in opponents court forcefully is called smashing. For smashing player takes off by two methods.

**(i) One leg take off :** Player runs and takes jump with one leg forcefully make arch of body and bring strong hand forward from backward to hit the ball which is set over the net, is called one leg take off.



**One leg take off**



**Two legs take off**

**(ii) Two leg take off :** Player runs and takes jump with two legs make arch of the body and bring strong hand forward from backward to hit the ball which is set over the net, is called two leg take off.

### **Rules of game :**

**(1) Point and set :** The team that scores 25 points, with difference of two points first will be declared winner (except fifth set). If scores are equal at 24 -24 points, the game shall continue till the lead of 2 points is achieved by a team, e.g : 26 - 24, 27 - 25 etc.

**(2)** In best of five sets, team which wins three sets is declared winner.

**(3)** In case of a 2-2 tie, the deciding 5th set is played upto 15 points with a minimum lead of 2 points. If both the team scores 14-14 points than the game shall continue till the lead of 2 points is achieved by a team. e.g. - 16 - 14, 17 - 15 etc. In the deciding set when, the any team scores 8 points, then the count is changed.

**Service :** (1) The first service of the first set, as well as that of the deciding 5th set is executed by the team determined by the toss. The other sets will be started with the service of the team that did not serve first in the previous set.

(2) The players must follow the service order recorded on the line-up sheet.

(3) The server must hit the ball within 8 seconds after the whistles for service.

(4) The ball shall be hit for service after being tossed.

(5) If serving ball passes under the net and touches other plays or antenna is considered as a foul.

(6) If server touches end line, it is considered as foul.

### **Playing the ball :**

- (1) The team is entitled to a maximum of three hits except blocking for returning the ball from over the net to the opponent court.
- (2) A player can not hit the ball twice consecutively.
- (3) When two (or three) team - mates touch the ball simultaneously, then is counted as two (or three) hits (with the exception of blocking).
- (4) When two opponents touch the ball simultaneously over the net and the ball remain in play, the team receiving the ball is entitled to another three hits.
- (5) While playing a ball if it is held for a moment, it is foul. Scooping, pushing or carrying is also foul.

### **Smashing, Blocking :**

- (1) A front - row player may act smashing at any height within his ground over the net.
- (2) A back - row player may not smash over the net from attack zone.
- (3) A back row player can hit the ball at any height from behind the attack line and may land in the attack zone.
- (4) A player can not touch the ball in the opponent's space over the net.
- (5) The players who have touched the ball during the block, they can play ball once again and it will be considered as first touch.
- (6) During block the ball cannot be played in the opponents' space over the net.
- (7) After a block contact, a team is entitled to three hits to return the ball.
- (8) The ball is go out due to the block is foul.
- (9) Blocking the opponent's service is foul.

### **Faults at the net :**

- (1) If ball touches the antenna or net outside the antenna is foul.
- (2) If player touches the net while playing the game is foul.
- (3) If players of both the teams touch the net simultaneously, then team who has served will serve again. No team will get point.
- (4) During play player crosses the centre line, is a foul.

### **Position of players and rotation :**

- (1) At the moment the ball is hit by the server, each team must be positioned within its own court in the rotation order.
- (2) The three players nearer to the net are front-row players and other three are back - row players.
- (3) After the service hit, the players may move around and occupy any position on their court.
- (4) When the service change, the players of servicing team rotate their position clock-wise.
- (5) The team commits a positional fault, if any player is not in his/her correct position at the moment the ball is hit by the server.
- (6) If team commits a positional fault, it loses the rally and players' positions must be rectified.

### **Substitution :**

- (1) Each team may substitute a maximum of six substitutions per set. One or more players may be substituted at the same time within the same request.
- (2) A substitute player may enter the game in place of a player of the starting line - up, but only once per set, and he / she can only be substituted by the same starting player.
- (3) After the legal substitution over and in place of injured player any player of team consisting of 12 players may enter in play.
- (4) When a team has made an illegal substitution they lose the rally and substitution must be rectified. If points are scored by the team at fault they will be cancelled.
- (5) After the legal substitution over and then main referee disqualify any player and removed from the play then incomplete team will be considered and lose the set.

### **Time out and Intervals :**

- (1) When the ball is dead, coach or captain may ask for time out.
- (2) Each team may ask maximum for two time outs. All time outs will last for 30 seconds.
- (3) During all time outs, the players must go to free zone.
- (4) If serious accident occurs to any player while the ball is in play, the referee must stop the game immediately and then rally is replayed.
- (5) If an injured player can not be substituted legally then the player is given a 3 minute recovery time. If the player does not prepare to play in stipulated time then his team will be declared as an incomplete.
- (6) An interval time between two sets is of 3 minutes. During this of time the change of courts, and give rotation order of the teams to the scorer.
- (7) In the deciding set, once the leading team reaches 8 points, the teams change court immediately without changing the positions of the players.

### **The Libro player :**

- (1) One libro player may be designated from the list of 12 players who have registered.
- (2) The libro player has to wear a uniform which has a different colour and designs from the rest of team.
- (3) With prior permission of the referee, injured libro player can be substituted, but he cannot replace again for rest of match.
- (4) Libro can not act as a team captain.
- (5) The libro player may enter or leave the court from the designated place by taking permission from referee before the play starts or ball is not in play.
- (6) Libro may not serve, block or smashing.

### **Misconduct :**

- (1) Any misconduct by a player will be penalised.
- (2) For first time a player will be warned and it recorded in score-sheet.

(3) Repeated misconduct by the same player will be expelled and shall not play for the rest of the set.

(4) A player who become aggressive and offensive, he will be debarred from the play immediately and will not play the rest of the matches.

(5) For the smooth conduct of the game referee may show the different colour cards to the players according to the needs and give instructions.

- Yellow card : Warning / caution.

- Red Card - Expulsion from set or rest of the tournament.

## Exercise

### 1. Explain the following skills

- (1) Simple service
- (2) Tennis service
- (3) Two hand under hand pass
- (4) Smashing - Two legs take off
- (5) Simple set up.

### 2. Answer the following questions in one or two sentences.

- (1) State the types of service in Volley ball.
- (2) State the types of passing in volley ball.
- (3) State the types of lifting (Set up).
- (4) List the equipments used in volley ball game.
- (5) At what height the ball is lifted in high set up in volley ball ?

### 3. Answers to the following questions by selecting correct option from the options given below.

- (1) How many playing members are there in one team ?  
 (A) Four                      (B) Five                      (C) Six                      (D) Seven
- (2) How many time outs are given during one set in volley ball game ?  
 (A) One                      (B) Two                      (C) Three                      (D) Four
- (3) How many points are there in deciding set in volleyball game ?  
 (A) 8                      (B) 15                      (C) 20                      (D) 25
- (4) Which number of ball is used in volley ball game ?  
 (A) Six                      (B) Five                      (C) Four                      (D) Three
- (5) What is the length of antenna in volley ball game ?  
 (A) 1 Mtrs                      (B) 1.30 Mtrs                      (C) 1.50 Mtrs                      (D) 1.80 Mtrs

A football game is one of the most popular games in the world. It is called soccer game in foreign countries. It is known as football game in India.

This game is very popular in Europe. Due to its popularity, it is considered. 'The king of games'. This game is played in the most of the countries of the world. The football world cup is considered one of the most thrilling and popular game after world Olympic. Some good players of football are counted 'National Wealth' of the country. i.e. The government of Brazil has given 'Brazil Wealth' status to Pelle the great football player of Brazil.

The football game started in the year 1863 in England so it is considered as birth place of the game. Players use socks up to knee and so, perhaps, the football game is known as 'soccer'.

### **International Football Federation :**

International football federation. FIFA, established at paris on 21st May, 1904. Due to establishment of FIFA, the rules of the football game are applied similarly in all the countries of the world. Today most of the countries are members of it. International competitions are organized with its approval and help. The country which is not a member of FIFA, is not allowed to participate in the International competition.

### **Football world cup :**

FIFA had accepted to organize football world cup in the year 1927. The honour of this scheme goes to Julereem and Henari Delon, football lovers of France. The world cup is organized every four years, but it is organized after two years of Olympic game in different countries. It is organized regularly since 1930 (except second world war period). First time the world cup was organized in Uruguay in the year of 1930. One thing should be kept in mind that from the year 1958 in the world cup competition, professional players can also participate.

The begining of modern Olympic games was in 1896. But the football game was included in the 1908 London from that year the Football game is included in every Olympic. One Olympic and thing should be kept in mind that only amateur players are going to participate in it.

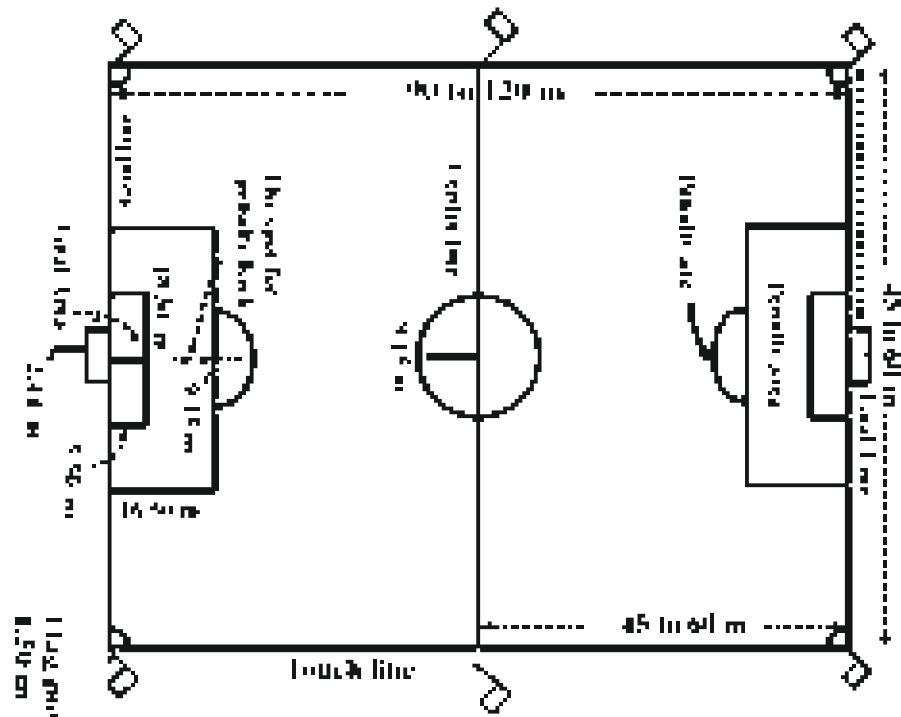
India had started 'Asian Games' in 1951 at Delhi and football game was included and India became champion in it. Since then football game was played regularly in Asian Game.

Englishmen started this game in India. "Delhousi Football Club was established in India. Indian football Association (IFA) was established in 1893, thereafter that association was transformed into All India Football Federation. National trophy of this game is called Santosh trophy in India. This trophy was started in 1941. More over other tournaments are also played regularly. Indian women also play football. Indian women team secured third place in Asian Women football cup in 1981.

### **Ground :**

The football game is palyed on rectangular ground. For international competition, the length of the ground should be 110 to 120 yards (101 to 110 metres) and width of the ground should be 70 to 80 yards (64 to 73 metres.) For other competitions, the measurements of the ground should be as under :

**Ground :**



**Football Ground**

The measurement of the football ground should be as under

Length : 100 yards to 130 yards (up to 90 to 120m).

Width : 50 yards to 100 yards (up to 45 to 90 metres).

(1) Width of the goal : 8 yards (7.3 m) and the height from the land should be 8 feet (2.4 m).

(2) The circumference measurement of the Goal poles and cross bar should be 5 inches (12cm).

(3) Goal area : Length - 20yards (18.30 m), Width - 6 yards (5.50 m).

(4) Penalty Area : Length - 44 yards (40.3m), Width : 18 yards (16.50m).

(5) Penalty spot : From the distance of the centre of the goal line 12 yards (11 m).

(6) Centre Circle : The radius of 10 yards (9.15 m).

(7) Corner Area : The arc of 1 yard (0.915 m).

(8) Penalty arc : The arc of 10 yards (9.15 m) is drawn from the penalty spot to outside penalty area.

(9) Flag : A flag on a post not less than 5 feet (1.50m) high shall be placed at each corner, a similar flag post may be placed opposite the half way - line on each side of the playfield is optional.

**Marking of the playfield :** The field of play shall be marked with distinctive lines, not more than 5 cm in width. The lines are included in the playfield.

**Equipments :**

A ball, goal net, corner flags and special socks for the goal keeper are required for this game.



**The Ball :**

The circumference of the ball shall be 27 to 28 inches (68 to 71 cm). The weight of the ball should be 14 to 16 oz (396 to 453 gram).

**Boots and uniform :**

There are special type of the boots in football game. There are 10 studs on the sole. The studs should be minimum of 3.8 inches in diameter. Most of the players wear boots, long socks, Jersey and short. There are numbers printed on the back side of the Jersey. There should be similar uniform of a whole team.



The uniform of the goalkeeper is distinctive than the other players taking part in the game. He can wear hand gloves also. He wears a long sleeve jersey a player shall not wear anything which is dangerous to another player. It is responsibility of each player to come on the ground with proper uniform.

**Skills :****Throw - in :**

When the ball goes beyond the touch line rolling or crosses it in the air, it will be regarded as having gone out of the boundary. When the ball goes out of the boundary line, a player from the team opposite to the team whose player was responsible for sending the ball out will be given 'throw-in', He puts the ball in play. Following matters should be kept in mind for throw-in.

- (1) The 'throw-in' is executed from the spot where the ball had crossed the touch line.
- (2) The 'thrower' will take his position facing the ground while 'throw-in'
- (3) The 'thrower' must keep both his feet touching the out part of touch line ground while 'throw-in'
- (4) The 'thrower' should take the ball in both hands behind his head and shall throw the ball -forward with both his hands. He should not put the ball slowly in the ground. A ball should be thrown with both hands.
- (5) No direct goal can be scored with a 'throw-in'.
- (6) The thrower will not be able to play the ball again until one of the plays touches or plays it.

**Passing :**

It is risky for a player to keep the ball in his possession for a long time and try playing with it, for the opponents will directly attack a player, who has the ball in his possession. In such a situation when a player is surrounded by the opponents, he passes the ball to a team-mate who is in a better position to play. This skill is known as 'passing'.

In order to pass the ball to a team-mate, a player uses the kick skill. he can also pass the ball coming through the air directly by using the 'heading' skill. If the ball is to be passed on to player who is standing at some distance away, the player uses the 'in-step' kick skill. If he has to send the ball to the left or right side, he uses the inside of kick. The success of the passing action depends upon the accuracy and judgement of the player. An agile player passes the ball coming through the air by giving it a suitable kick. This is called the "Volley".

**Heading :**

To prevent a ball coming from some height in the air from falling on the ground, the player hits the ball with his forehead. This skill is called heading. While heading, the action of hitting the ball must be done with the forehead. The body is bent backwards and is to be extended from the waist with a jerk to where the ball is to be contacted and both the arms are bent at the elbows. The muscles of the neck are hardened and both legs are slightly bent at the knees. Heading is divided into different types depending on the direction in

which the ball goes after it is hit with the forehead : If the ball passes towards the front, it is called 'forward heading'. If the ball goes from above the head, it is called 'upward heading'.

If the ball goes downwards, it is called 'downward heading' and if it goes towards the side, it is called sideward heading and if it goes towards the backside, it is called 'backward heading'. During all these different types of heading, the body is bent slightly backward or forward, but every time the body should be brought forward with jerk at the waist and it should be hit with the forehead.

### **Kicking :**

When a player sends the ball at the short distance or a long distance with a kick is called 'kicking'. This is one of the most important and basic skill in the football game. This skill is useful for passing the ball which is coming towards him or is in his possession towards his team - mate or if the situation is favourable, sending it to the goal with a kick. There are seven different types of kicking . (1) In step kick (2) Inside of the foot kick (3) Out side of foot kick (4) Drop kick (5) Ground kick (6) Push kick and (7) Volley kick.

### **Goal Keeping :**

The goal keeper plays an important role to stop the goal. The goal keeper is privileged to push or catch the ball with the hand to protect the goal posts till the penalty area. So, his position and responsibilities are different from the other members of the team. He is expected to be more skilled than the other players. The goal keeper plays the ball more often with his hands than with his feet. The goalkeeper must always stand firmly like a wall between the ball and the goal to protect the goal. The goal keeper has to use his hands, feet and head to stop and throw away the ball coming from any side. Sometimes, he has to dive to catch or stop the ball. The goal keeper is expected to have a perfect co-ordination to his arms and legs and the maximum capacity to maintain the balance of his body. In addition to the ability to catch, push and throw the ball, the goal keeper is expected to master the skill of kicking dribbling and dodging.

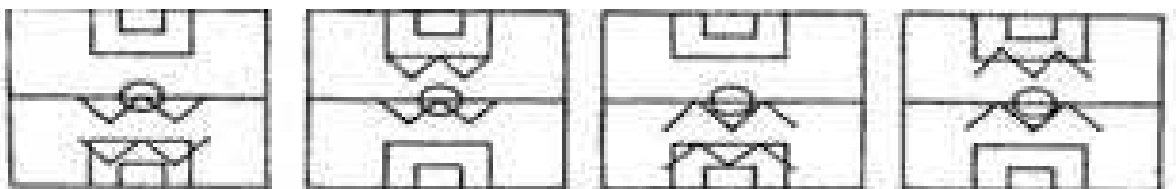
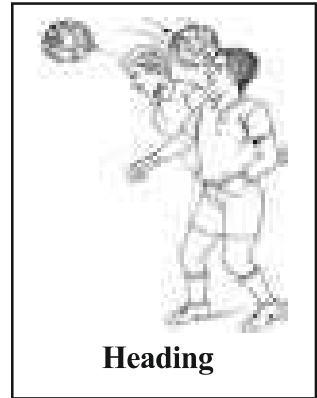
### **Defending and Attacking :**

#### **Position Play :**

There are 11 players in each team of football. Generally, 5 players forward players of front line are known as right out, right in, centre forward, left out and left in. While three players of centre line are known as right half back, centre half back and left half back, two players of back line are known as right full back and left full back. The protector of goal is known as goalkeeper. A goalkeeper shall wear full sleeve jersey of separate colors which distinguish him from the other players.

#### **Team Game :**

The play field of football is big one. In this big ground, a player has to play instead of individual, he has to play team game and then With the combined efforts of the players it is easy for defence and attacking and it may be transformed in good performance and result. Generally in football game the formation M and W are for attacking and defencing. In this formation, five players of front line, play in 'M' formation and five players of back line also play in 'W' formation. At the time of attacking, the front five players play completely forward.



Five players of back line go up to the half ground and pass the ball to the forward players for goal. While they play in reverse formation (M), they do attack and defence. In this formation right in and left in play forward and centre forward, right out and left out players play back. In the same way rear half back and full back players play in M formation.

When the , five attack players of front line go to the opposite ground for goal, the defender players, except the goalkeeper, 3 half back and 2 fullback players seize each player and perform as defender in football game.

### **Strategy :**

When players play in their own half play ground and perform defensive duty, he is allotted main defensive duty. If there is need he goes every now and then to help his players and maintain the co-ordination among the players.

### **Rules of the game :**

(1) The football game will be played between two teams, each consisting of 11 players at the beginning of the game. Any team can start playing with seven members. One of them will act as the goalkeeper. Players who arrive late may join the game with the permission of the referee. But the members of team should not be more than 7 players. No player will leave the ground during the play. If a player leaves the ground during play, he will not be able to re-enter the ground before the end of the game. Each team can use two substitutes any time during the course of the game.

(2) The game starts with the tossing of the coin. The team which wins the toss chooses either the side of the ground or kicking. The ball is placed on the centre point of the ground and when it is steady, the player who is to kick, kicks the ball. At the time of kicking, all remaining players stand in their own sides of the ground, away from the ball.

(3) If during play, the ball goes beyond the end line or the touch line rolling or crosses it in the air, it will be considered as having gone out of the boundary. The side boundary lines are included as part of the ground. So the ball touching the outer edge of the line will be considered as 'in'. When the ball goes to out of the boundary line, a player from the team opposite to the team whose player was responsible for sending the ball out will be given a 'throw-in'. The 'throw-in' is executed from the out parts of the spot where the ball had crossed the boundary line.

The 'thrower' will take his position facing the ground and will place the ball in both his hands over his head and throws the ball with both hands. in with both his hands. With this action, the ball will come in to play. The thrower will not be able to play the ball again until one of the players touches or plays it. No direct-goal can be scored with a 'throw-in'. The 'thrower' must keep both his feet touching the ground until the ball is released from his hands.

### **Penalties:**

(1) If the throw-in is wrong, the opposite team will get the chance to throw-in from the same spot.

(2) If the thrower plays the ball before any other player touches or plays it, the opposite team will be given an 'indirect free kick.'

(3) If the ball passes between the two goal posts and under the horizontal bar and crosses the goal line either in the air or on the ground, it will be considered as a goal scored. If a defending player crosses the goal line from between the posts with the ball in his hands, it will also be considered as a goal.

If the ball coming as a result of an indirect free kick is kicked or touched by a player of either team and it crosses the goal line between the two posts and from under the cross bar, it will be considered as a goal.

(4) If during play, the attacking team sends a ball and it goes rolling on the ground or flying in the air beyond the goal line, a player from the defending team will place the ball in the middle of the goal area on the side by which the ball had gone out and then execute a goal kick. When the goal kick is being executed, all the players of attacking team will stand outside the penalty area. After the goal kick, the ball will not be considered as being in play until the ball goes out of the penalty area. If the ball does not go out of the penalty area, the goal kick will be given again. The players who kick the ball will not be able to play the ball again until any player touches or plays it. If the same player plays the ball a second time, it will be considered breach of rule and the opposite team will be awarded an indirect free kick from the spot where the fault was committed.

(5) A ball which has last touched a player of the defending team or if a ball hit by a player of defending team crosses the goal line while rolling on the ground or through the air, the attacking team will be awarded a 'corner kick'. The corner kick will be executed by placing the ball in the area drawn on the side by which the ball went out and the kick will be executed from here.

(6) During a football match, not more than 11 players will play in each team. One of them will be a goal keeper. During play, no player will be allowed to leave the ground without the permission of the referee.

(7) During play, a maximum of two substitute players can take place of the regular players with the permission of the referee. Five substitute players can be appointed in the team.

(8) The game will consist of two halves of 45 minutes each. There will be a break of 10 minutes between the two halves. After this break, both the teams will change their ground. At the end of the first half or at the end of the game, if a team has been awarded penalty kick, the game will be extended by the time needed to complete the penalty kick.

(9) If at the end of the play, both the teams have scored equal number of goals or no goals and the results are same then both the teams will be given two extra turns of 15 minutes of each.

(10) If in spite of the play being extended to extra time, if both the teams are still equal, each team will be given five penalty kicks. The referee will decide the goal posts for the penalty kicks. Each team will take the kick by turns. Each kick will be executed by different players. No player will be allowed to kick twice.

**Officials :** (1) One Chief Referee (2) Two lines-men (3) A scorer (4) A time keeper.

### Exercise

#### 1. Answer the following questions :

- (1) Explain the 'throw-in' skill of football.
- (2) Explain the 'Passing' skill of football.
- (3) Explain the 'Heading' skill in football.
- (4) Clarify the kicking skill in football.
- (5) Give the explanation of goal keeping in football.

#### 2. Answer the following questions in one or two sentences.

- (1) Describe the feet position of thrower in football.
- (2) When the thrower will be able to play the ball ?
- (3) A player is surrounded by the opponents, to whom he passes the ball ?
- (4) By which part, the player hits the ball in heading ?
- (5) Which parts of the body are to be used by the goal keeper for playing the ball ?
- (6) When will be given throw-in ?

- (7) Both the teams have scored an equal number of goals, what does the referee do ?  
 (8) When the player kicks the ball for play, at that time, where do stand all the remaining players ?

**3. Answers to the following questions by selecting correct option from the options given below.**

- (1) Where shall be placed flags on the football ground ?  
 (A) In the middle of goal line (B) In the middle of touch line.  
 (C) Near goal posts (D) On the four corners.
- (2) What is the radius of centre circle ?  
 (A) 8 yards (B) 9 yards (C) 10 yards (D) 11 yards
- (3) What is the length of a football ground ?  
 (A) 70 to 80 metres (B) 75 to 85 metres  
 (C) 120 to 130 metres (D) 90 to 120 metres
- (4) What is the width of a football ground ?  
 (A) 35 to 40 metres (B) 45 to 90 metres (C) 95 to 100 metres (D) 100 to 105 metres
- (5) What is the shape of football ground ?  
 (A) Square (B) Rectangular (C) Round (D) Oval
- (6) How many studs are there at a sole of boot of football game ?  
 (A) 5 (B) 7 (C) 8 (D) 10
- (7) How many players are there in the playing team of football ?  
 (A) 9 (B) 10 (C) 11 (D) 12
- (8) How many substitutes can be used in football game ?  
 (A) One (B) Two (C) Three (D) Four
- (9) What is the duration of the game of one half (one play) ?  
 (A) 45 minutes (B) 50 minutes (C) 55 minutes (D) 40 minutes
- (10) What is the duration of the break between two halves in football game ?  
 (A) 5 minutes (B) 7 minutes (C) 8 minutes (D) 10 minutes

