G. D. GOENKA PUBLIC SCHOOL, JAIPUR

HOLIDAY HOMEWORK 2014-15

CLASS IX /MATH

Name : _____

Solve the questions (in a separate notebook)

1. (-2 - $\sqrt{3}$)(-2 + $\sqrt{3}$) when simplified is: (a)

   positive and irrational

   (b) positive and rational

   (c) negative and irrational

   (d) negative and rational

2. Two rational numbers between $\frac{1}{2} and \frac{5}{3}$ are:

   (a) 1/6 and 2/6 (b) ½ and 2/1

   (c) 5/6 and 7/6 (d) 2/3 and 4/3

3. The sum of the digits of a number is subtracted from the number, the resulting number is always divisible by:

   (a) 2 (b) 5

   (c) 8 (d) 9

4. (6 + $\sqrt{27)} - (3+\sqrt{3}) + (1-2\sqrt{3})$ when simplified is:

(a) positive and irrational

(b) negative and rational

(c) positive and rational

(d) negative and irrational

5. Two rational numbers between 1/5 and 4/5 are:

(a) 1 and 3/5 (b) 2/5 and 3/5

(c) 1/2 and 2/1 (d) 3/5 and 6/5

6. Add $5\sqrt{2} + 3\sqrt{3}$ and $2 - 5\sqrt{3}$.

(a) $7\sqrt{2} - 2\sqrt{3}$ (b) $6\sqrt{2} - 3\sqrt{3}$

(c) $6\sqrt{2} - 8\sqrt{3}$ (d) $6\sqrt{2} + 8\sqrt{3}$

7. A number is an irrational if and only if its decimal representation is:

(a) non- terminating

(b) non – terminating and repeating

(c) non – terminating and non- repeating

(d) terminating

8. The value of $\sqrt[4]{(64)^{-2}}$ is:

(a) $\frac{1}{8}$ (b) $\frac{1}{2}$

(c) 8 (d) $\frac{1}{64}$

9. $(5 + \sqrt{5})(5 - \sqrt{5})$ on simplification gives:

(a) 20 (b) $2\sqrt{5}$

(c) 10 (d) 25

10. $\sqrt[3]{\frac{54}{250}}$ is:

(a) $\frac{9}{25}$ (b) $\frac{3}{5}$

(c) $\frac{27}{125}$ (d) $\sqrt[3]{\frac{2}{5}}$

11. The value of $7^{\frac{1}{2}} 8^{\frac{1}{2}}$ is :

(a) $28^{\frac{1}{2}}$ (b) $56^{\frac{1}{2}}$

(c) $14^{\frac{1}{2}}$ (d) $42^{\frac{1}{2}}$

12. The value of $\sqrt[4]{\sqrt[3]{2^2}}$ equal to :

(a) $2^{-1/6}$ (b) 2^{-6}

(c) $2^{1/6}$ (d) 2^{6}

13. When $15\sqrt{15}$ is divided by $3\sqrt{3}$ the quotient is:

(a) $5\sqrt{3}$ (b) $5\sqrt{5}$

(c) $5\sqrt{5}$ (d) $3\sqrt{3}$

14. Which of the following number is irrational?

(a) $\sqrt{16}$ (b) $(3 - \sqrt{3})(3 + \sqrt{3})$

(c) $\sqrt{5} + 3$ (d) $-\sqrt{25}$

15. The value of $\frac{2^o + 7^o}{5^o}$ is:

(a) 2 (b) 0

(c) $\frac{9}{5}$ (d) $\frac{1}{5}$

16. $(5 + \sqrt{8}) + (3 - \sqrt{2}) - (\sqrt{2} - 6)$ when simplified is:

(a) positive and irrational

(b) negative and irrational

(c) positive and rational

(d) negative and rational

17. An irrational number between $5/7$ and $7/9$ is:

(a) 0.75 (b) $\sqrt{6}$

(c) 0.750750075000… (d) 0.7512

18. Simplified value of $(25)^{1/3} \times (5)^{1/3}$ is:

(a) 25 (b) 3

(c) 1 (d) 5

19. Which of the following is an irrational number?

(a) 2.2 (b) π

(c) 3.763 (d) 3.763

20. Which of the following is an irrational number?

(a) $\sqrt{23}$ (b) $\sqrt{225}$

(c) 0.3796 (d) 7.478

21. Which of the following is the value of $(\sqrt{11}-\sqrt{7})(\sqrt{11}+\sqrt{7})$

(a) -4 (b) 4

(c) $\sqrt{11}$ (d) $\sqrt{7}$

22. Which of the following is a rational number?

(a) $1+\sqrt{3}$ (b) π

(c) $2\sqrt{3}$ (d) 0

23. Simplified value of $(16)^{\frac{-1}{4}} \times \sqrt[4]{16}$ is:

(a) 16 (b) 4

(c) 1 (d) 0

24. Value of $\sqrt{(3^{-2})}$ is:

(a) $\frac{1}{9}$ (b) 9

(c) -3 (d) $\frac{1}{3}$

25. Zero of the polynomial p(x) where p(x) = ax, $a \neq 0$ is:

(a) 1 (b) a

(c) 0 (d) $\frac{1}{a}$

26. If $\sqrt{3}$ = 1.732 and $\sqrt{2}$ = 1.414, the value of $\frac{1}{\sqrt{3}-\sqrt{2}}$ is:

(a) 0.318 (b) 3.146

(c) $\frac{1}{3.146}$ (d) $\sqrt{1.732}-\sqrt{1.414}$

27. Which one of the following is an irrational number?

(a) 0.14 (b) 0.1416

(c) 0.1416 (d) 0.4014001400014…..

28. π is:

(a) a rational number (b) an integer

(c) an irrational number (d) a whole number

29. The decimal form of $\frac{56}{100}$ is:

(a) 0.56 (b) 0.056

(c) 0.0056 (d) 5.6

30. The decimal expansion of $\sqrt{2}$ is:

(a) finite decimal

(b) 1.4121

(c) non- terminating recurring

(d) non-terminating non- recurring

31. Simplify: $\frac{13^{1/5}}{13^{1/3}}$

(a) $13^{2/15}$ (b) $13^{8/15}$

(c) $13^{1/3}$ (d) $13^{-2/15}$

32. $\frac{p}{q}$ form of the number 0.3 is:

(a) $\frac{3}{10}$ (b) $\frac{3}{100}$

(c) $\frac{1}{3}$ (d) $\frac{1}{2}$

33. The simplest rationalization factor of $\sqrt{50}$ is:

(a) $5\sqrt{2}$ (b) $\sqrt{2}$

(c) 50 (d) $\sqrt{50}$

34. The value of $(125)^{-1/3}$ s

(a) 25 (b) $\frac{1}{5}$

(c) 5 (d) $\frac{1}{25}$

35. The product of Quotient of a non-zero rational number with an irrational number is:

(a) Irrational number (b) Rational number

(c) Whole number (d) Natural number

36. The value of $\sqrt{20} \times \sqrt{5}$ is

(a) 10 (b) $2\sqrt{5}$

(c) $20\sqrt{5}$ (d) $4\sqrt{5}$

37. Which of the following is irrational number?

(a) 0.15 (b) 0.1516

(c) 0.1516 (d) 0.501500150001---

38. If x = 2 + $\sqrt{3}$, then $\left(x + \frac{1}{x}\right)$ equals to:

(a) $-2\sqrt{3}$ (b) 2

(c) 4 (d) $4 - 2\sqrt{3}$

39. A rational number lying between $\sqrt{2}$ and $\sqrt{3}$ is:

(a) $\frac{\sqrt{2}+\sqrt{3}}{2}$ (b) $\sqrt{6}$

(c) 1.6 (d) -1

40. The value of $\sqrt[3]{216} - \sqrt[3]{125}$ is:

(a) 1 (b) 0

(c) 2 (d) -1

41. Which of the following is a rational number?

(a) $\sqrt{5}$ (b) π

(c) 0.101001000100001….. (d) 0.853853853…….

42. A rational number between -3 and 3 is

(a) 0 (b) -4.3

(c) -3.4 (d) 1.101100110001….

43. Which of the following is an irrational number?

(a) 3.3 (b) 3.763

(c) 3.763 (d) 3.101100110001…..

44. The factors of $(2a - b)^3 + (b - 2c)^3 + 8(c - a)^3$ is: (a) (2a – b)(b – 2c)(c –a)

(b) 3(2a – b)(b – 2c)(c –a) (c) 6(2a –b)(b – 2c)(c –a) (d) 2a × b × 2c

45. In which of the following (x + 2) is a factor?

(a) $4^3 - 13x + 6$ (b) $x^3 + x2 + x + 4$

(c) $4^3 + 13x - 25$ (d) $-2x^3 + x2 - x - 19$

46. Which of the following is a binomial in y? (a) 2y + 3y (b) 2y + 1

(c) $\sqrt{y} + \sqrt{2y}$ (d) $y\sqrt{y} + 1$

47. Which of the following polynomials has -3 as a zero?

(a) (x – 3) (b) $x^2 - 9$

(c) $x^2 - 3x$ (d) $x^2 + 3$

48. Which of the following is a polynomial in x?

(a) $x + \frac{1}{x}$ (b) $x^2 + \sqrt{x}$

(c) $x + \sqrt{2}\, x^2 + 1$ (d) $\sqrt{3x} + 1$

49. The remainder when $x^2 + 2x + 1$ is divided by $(x + 1)$ is

(a) 4 (b) 0

(c) 1 (d) -2

50. Which of the following is a trinomial in x?

(a) $x^3 + 1$ (b) $x^3 + x2 + x$

(c) $x\sqrt{x} + \sqrt{x} + 1$ (d) $x^3 + 2x$

51. The value of the polynomial x2 – x – 1 at x = -1 is:

(a) -3 (b) 1

(c) -1 (d) 0

52. If $P(x) = 7 – 3x + 2x^2$ then value of P (-2) is :

(a) 12 (b) 31

(c) 21 (d) 22

53. The coefficient of x^2 in $(3x + x^3)\left(x + \frac{1}{x}\right)$ is:

(a) 3 (b) 1

(c) 4 (d) 2

54. What is remainder when $x^3 – 2x^2 + x + 1$ is divided by $(x – 1)$?

(a) 0 (b) -1

(c) 1 (d) 2

55. Degree of which of the following polynomial is zero?

(a) x (b) 15

(c) y (d) x + $\frac{1}{x}$

56. When p(x) is divided by ax – b then the remainder is: (a) p (a + b) (b) p (-b /a)

(c) p (a / b) (d) p (b / a)

57. If $x^2 + kx + 6 = (x + 2)(x + 3)$ for all x, the value of k is: (a) 1

(b) -1

(c) 5 (d) 3

58. Zero of the zero polynomial is:

(a) 0 (b) 1

(c) any real number (d) not defined

59. Which of the following is cubic polynomial (a) $x^3 + 3x^2 – 4x + 3$ (b) $x^2 + 4x – 7$ (c) $3x^2 + 4$

(d) $3 (x^2 + x + 1)$

60. If $x^{51} + 51$ is divided by (x + 1) the remainder is: (a) 0

(b) 1

(c) 49 (d) 50