THIRU TUITION CENTRE

KUNICHI,TIRUPATTUR, VELLORE DISRICT.

VIII STD   **1.Real Number System** $102 \times 1 = 102$ marks

Choose the best answer

1. **If $\frac{a}{b}$ and $\frac{c}{d}$ are any two rational numbers,then $\frac{a}{b} - \frac{c}{d}$ is also a rational number.**

2. **If $\frac{a}{b}$ and $\frac{c}{d}$ are any two rational numbers,then $\frac{a}{b} \times \frac{c}{d} = \frac{c}{d} \times \frac{a}{b}$**

4. **If $\frac{a}{b}$ is any rational number ,then $\frac{a}{b} \times 0 = 0 = 0 \times \frac{a}{b}$**

5. **0 has no reciprocal.**

6. **1 and 1 are the only rational numbers which are their own reciprocals.**

7. **If $\frac{a}{b}$ and $\frac{c}{d}$ are any two rational numbers,then $\frac{c}{d} \neq 0$, $\frac{a}{b} \div \frac{c}{d}$ is always a rational number.**

8. **The additive identity of rational numbers is**

9. **The additive inverse of $\frac{-3}{5}$ is**

10. **The reciprocal of $\frac{-5}{13}$ is**

11. **The multiplicative inverse of -7 is**

12. **has no reciprocal.**

13. **Average of two numbers always lie between that numbers.**

14. **Find a rational number between $\frac{3}{4}$ and $\frac{4}{5}$ The rational number is $\frac{31}{40}$**

15. **Find two rational numbers between** $\frac{-3}{5}$ **and** $\frac{1}{2}$ **The two rational numbers are** $\frac{-1}{20}$ **and** $\frac{-13}{40}$

16. $2 \times \frac{5}{3} = \frac{10}{3}$

17. $\frac{2}{5} \times \frac{4}{7} = \frac{8}{35}$

18. $\frac{2}{5} + \frac{4}{9} = \frac{38}{45}$

19. $\frac{1}{5} \div 2\frac{1}{2} = \frac{2}{25}$

20. $\left(1 - \frac{1}{2}\right) + \left(\frac{3}{4} - \frac{1}{4}\right) = 1$

21. **Laws of Exponents with Integral Power**

    i. $a^m \times a^n = a^{m+n}$ **where** a **is a real number and** m, n **are positive integers**

    ii. $\frac{a^m}{a^n} = a^{m-n}$ **where** $a \neq 0$ **and** m, n **are positive integers with** $m > n$

    iii. $(a^m)^n = a^{mn}$ **,where** m **and** n **are positive integers**

    iv. **If** a **is a rational number other than zero, then** $a^0 = 1$

    v. **If** a **is a real number and** m **is an integer, then** $A^{-m} = \frac{1}{a^m}$

    vi. **For any two integers a and b we have** $a^m \times a^m = (ab)^m$

vii. $\left(\frac{a}{b}\right)^m = \left(\frac{a^m}{b^m}\right)$ where $b \neq 0$, a and b are real numbers, m is an integer

22. In 10^2, the exponent is 100

23. 6^{-1} is equal to $\frac{1}{6}$

24. The multiplicative inverse of 2^{-4} is 2^4

25. $(-2)^{-5} \times (-2)^6$ is equal to -2

26. $(-2)^{-2}$ is equal to $\frac{1}{4}$

27. $(2^0 + 4^{-1}) \times 2^2$ is equal to 5

28. $\left(\frac{1}{3}\right)^{-4}$ is equal to 3^4

29. $(-1)^{50}$ is equal to 1

30. $\frac{5}{20} = 25$ percentage

31. When a number ends with 0, its square ends with double zeros.

32. If a number ends with odd number of zeros then it is not a perfect square.

33. Squares of even numbers are even.

34. Squares of odd numbers are odd.

35. How many the unit digits of the squares of the number 24 is 6

36. Find the square root of 64 is 8

37. Find the square root of 12.25 is 3.5

38. Find the square root of 3969 is 63

39. Find the square root of 6.0516 is 2.46

40. Find the square root of 3 correct to two places of decimal. ans:1.73

41. Find the square root of $10\frac{2}{3}$correct to two places of decimal.ans:3.27

42. 1729 is known as the Ramanujan number.

43. Find the cube root of 512 is 8

44. Find the cube root of $\frac{-512}{1000}$ is $\frac{-4}{5}$

45. Which of the following numbers is a perfect cube? 125

46. Which of the following numbers is not a perfect cube? 343

47. The cube of an odd natural number is ODD.

48. The number of zeros of the cube root of 1000 is 1

49. The unit digit of the cube of the number 50 is 0

50. The number of zeros at the end of the cube of 100 is 6

51. Find the smallest number by which the number 108 must be multiplied to obtain a perfect cube. ans:2

52. Find the smallest number by which the number 88 must be divided to obtain a perfect cube. ans:11

53. The volume of a cube is $64cm^3$. The side of the cube is 4 cm

54. Rational numbers are closed under the operations of addition, subtraction and multiplication.

55. The collection of non-zero rational numbers is closed under division.

56. The operations addition and multiplication are commutative and associative for rational numbers.

57. 0 is the additive identity for rational numbers.

58. 1 is the multplicative identity for rational numbers.

59. Multiplication of rational numbers is distributive over addition and subtraction.

60. $16x^4 \div 32x$ is $\frac{x^3}{2}$

61. The additive inverse of $\frac{a}{b}$ is $\frac{-a}{b}$ and vice-versa.

62. The reciprocal or multiplicative inverse of $\frac{a}{b}$ is $\frac{b}{a}$

63. Between two rational numbers, there are countless rational numbers.

64. Estimated value of a number equidistant from the other numbers is always greater than the given number and nearer to it.

4.Algebra

65. The father of Algebrais called as Diophantus of Alexandria

66. An Algebraic expression that contains only one term is called a monomial.

67. An Algebraic expression that contains only two terms is called a binomial.

68. An Algebraic expression that contains only three terms is called a trinomial.

69. An expression containing a fi nite number of terms with non-zero coefficient is called a polynomial.

70. The monomials in the polynomial are called the terms. The highest power of the terms is the degree of the polynomial.

71. **Find out the sum of the polynomials**

    $3x - y, 2y - 2x, x + y$

72. **The coefficient of x^4 in $-5x^7 + \frac{3}{7}x^4 - 3x^3 + 7x^2 - 1$ is $\frac{3}{7}$**

73. **The coefficient of xy^2 in $7x^2 - 14x^2y + 14xy^2 - 5$ is 14**

74. **The power of the term $x^3y^2z^2$ is 3**

75. **The degree of the polynomial $x^2 - 5x^4 + \frac{3}{4}x^7 - 73x + 5$ is 7**

76. **The degree of the polynomial $x^2 - 5x^2y^3 + 30x^3y^4 - 576xy$ is 7**

77. **$x^2 + y^2 - 2z^2 + 5x - 7$ is a polynomial**

78. **The constant term of $0.4x^7 - 75y^2 - 0.75$ is -0.75**

79. **Product of monomials are also monomials.**

80. **Coefficient of the product = Coefficient of the first monomial × Coefficient of the second monomial.**

81. **The product of a monomial by a binomial is a binomial.**

82. **Simplify: $(2x) \times (3x + 5)$ ans:$6x^2 + 10x$**

83. **Simplify: $(x + 3) \times (x^2 - 5x + 7)$ ans:$x^3 - 2x^2 - 8x + 21$**

84. **An equation which is true for all possible values of the variable is called an Identity.**

85. **A whole number greater than 1 for which the only factors are 1 and itself, is called a prime number.**

86. **A whole number greater than 1 which has more than two factors is called a composite number.**

87. While writing a number as a product of factors, we do not normally write 1 as a factor, since 1 is a factor of any number.

88. Every natural number is either prime or composite.

89. 1 is neither prime nor composite.

90. A factor that cannot be factorized further is known as irreducible factor.

91. **Factorize:** $x^2 + 6x + 8$ **are** $(x+4), (x+2)$

92. **The factors of** $3a + 21ab$ **are** $3a, (1 + 7b)$

93. **The factors of** $3a + 21$ **are** $3a, (1 + 7b)$

94. **The factors of** $x^2 - x - 12$ **are** $(x + 3), (x + 4)$

95. **The factors of** $6x^2 - x - 15$ **are** $(2x + 3)$ **and** $(3x - 15)$

96. **The factors of** $169l^2 - 441m^2$ **are** $(13l - 21m), (13l - 21m)$

97. **The product of** $(x - 1) \times (2x - 3)$ **is** $2x^2 - 5x + 3$

98. An algebraic equation is an equality involving variables and constants.

99. A Linear equation in one variable has a unique solution.

100. Find the two consecutive positive odd integers whose sum is 32 Ans:The two required consecutive positive odd integers are 15 and 17.

101. Arun is now half as old as his father. Twelve years ago the fathers age was three times as old as Arun. Find their present ages.Ans: Aruns present age$= 24$ years, His fathers present age $= 48$ years.

102. An equation involving one or more variables each with power 1 is called a Linear equation.

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