Seat No. : _____

JB-122

January-2021

B.Ed., Sem.-III

B-106 : Mathematics
(Pedagogy of School Subject)

Time : 2 Hours] **[Max. Marks : 50**

1. The difference between two whole numbers is 66. The ratio of the two numbers is 2 : 5. The two numbers are :

   (a) 60 and 6 (b) 100 and 33

   (c) 110 and 44 (d) 99 and 33

2. If area of square is 625.25 m^2, then measure of side is _____ .

   (a) 25.500 m (b) 25.005 m

   (c) 25.05 m (d) 25.050 m

3. If parameter of rectangle is 13 cm and breadth is $\frac{23}{4}$ cm then length is _____.

   (a) $3\frac{3}{4}$ (b) $4\frac{4}{3}$

   (c) $4\frac{3}{2}$ (d) $3\frac{4}{3}$

4. If 0.25 (4f – 3) = 0.05 (10f – 9) then f = _____.

   (a) 6 (b) 0.06

   (c) –6 (d) 0.6

5. If price of pair of shoes was ₹ 450 in one shop and 5% GST had claimed on it then amount of the bill was ₹ _____.

   (a) 472.70 (b) 427.60

   (c) 472.50 (d) 477.20

6. If a radius of one cylinder is 7 cm and total surface is 968 cm^2, then height of cylinder will be _____.

(a) 16 cm (b) 14 cm

(c) 15 cm (d) 21 cm

7. $\left(\frac{5}{8}\right)^{-7} \times \left(\frac{8}{5}\right)^{-5} =$ _____.

(a) $\left(\frac{25}{64}\right)$ (b) $\left(\frac{36}{28}\right)$

(c) $\left(\frac{12}{13}\right)$ (d) $\left(\frac{64}{25}\right)$

8. If $\left(\frac{2x}{3}\right) + 1 = \left(\frac{7x}{15}\right) + 3$ then $x =$ _____

(a) 90 (b) 10

(c) – 10 (d) – 90

9. Surface area of cube = _____.

(a) $3l^3$ (b) $3l^2$

(c) $6l^3$ (d) $6l^2$

10. 1 m^3 = _____ cm^3.

(a) 100 00 00 (b) 100 00 000

(c) 10000 (d) 100 00 00 00

11. $\frac{1-\cos A}{\sin A} =$ _____

(a) $\frac{\sin A}{1-\cos A}$ (b) $\frac{\sin A}{1+\cos A}$

(c) $\frac{\cos A}{1-\cos A}$ (d) $\frac{\cos A}{1+\cos A}$

12. If $x - 1$ is one of the factor of $p(x) = 2x + kx + \sqrt{2}$ then k = _____.

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

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

13. $(-12)^3 + (7)^3 + (5)^3$ = _____.

(a) 1620 (b) – 1620

(c) 1260 (d) – 1260

14. _____ is one of the zeros of the polynomial $x^3 - 6x^2 + 2x - 12$.

(a) – 6 (b) 6

(c) 3 (d) 12

15. The line joining P(–2, 3) and Q(4,3) = _____.

(a) is parallel to the X-axis (b) is parallel to the Y-axis

(c) is perpendicular to the Y-axis (d) intersects both the axes

16. $\angle$ ACD is an exterior angle of Δ ABC if $\angle$ ACD =110º and $\angle$ A = 60º then $\angle$ B = _____.

(a) 50º (b) 60º

(c) 120º (d) 30º

17. In Δ ABC, $\angle$ A = $\angle$ C, AC = 5 and BC = 4, then the perimeter of Δ ABC is _____.

(a) 9 (b) 11

(c) 13 (d) 17

18. In Δ ABC, P is the midpoint of AB and Q is the midpoint of AC, then PQCB is a _____.

(a) Parallelogram (b) Rectangle

(c) Trapezium (d) Rhombus

19. Δ PQR $\angle$ Q = 90º, PQ = 5 cm and PR = 13 cm, Then ar (PQR) = _____ cm^2.

(a) 30 (b) 15

(c) 45 (d) 60

20. In a circle with centre P, AB and CD are congruent chords. If $\angle$ PAB = 40º, then $\angle$ CPD = _____.

(a) 90º (b) 110º

(c) 100º (d) 105º

21. In cyclic quadrilateral ABCD, $\angle$ A = 70º and $\angle$ B + $\angle$ C = 160º. Then $\angle$ B = _____.

(a) 130º (b) 25º

(c) 35º (d) 50º

22. The perimeter of rhombus ABCD is 40 cm and BD = 16 cm. Then ar (ABCD) = _____ cm^2.

(a) 48 (b) 96

(c) 24 (d) 72

23. The height of a cone is 24 cm and its slant height is 25 cm. Then its diameter is _____ cm.

(a) 14 (b) 12

(c) 7 (d) 49

24. The total surface area of a closed cylinder with radius 3.5 cm and height 6.5 cm is _____ cm^2.

(a) 110 (b) 330

(c) 220 (d) 440

25. The surface area of a sphere is 616 cm^2. Then its radius is _____cm.

(a) 6 (b) 14

(c) 8 (d) 7

26. The mean of first five prime number is _____.

(a) 28 (b) 2.8

(c) 5.6 (d) 1.4

27. When a balanced die is thrown the probability of getting 3 is _____.

(a) $\frac{1}{6}$ (b) $\frac{1}{4}$

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

28. $(\sqrt{3} - \sqrt{2})^2$ is a/an _____ number.

(a) natural (b) irrational

(c) rational (d) whole

29. In cyclic quadrilateral ABCD, $\angle A - \angle C = 20°$. Then $\angle A$ = _____.

(a) 80° (b) 50°

(c) 20° (d) 100°

30. PQRS is square if PQ = 10 cm. Then PR = _____ cm.

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

(c) 10 (d) 20

31. _____ is the smallest number which when divided by 20, 30 and 40 leaves a remainder 5 ?

(a) 115 (b) 120

(c) 125 (d) 130

32. Product of three consecutive integers is divisible by _____.

(a) 24 (b) 6

(c) 20 (d) 8 but not by 24

33. The cubic polynomial $p(x) = x^3 - x$ has _____ zero.

(a) 0 (b) 1

(c) 2 (d) 3

34. In a two digit number, the digit at tens place is 7 and the sum of the digits is 8 times the digit at unit place. Then the number is _____.

(a) 70 (b) 71

(c) 17 (d) 78

35. The quadratic equation _____ has 3 as one of its roots.

(a) $x^2 - x - 6 = 0$ (b) $x^2 + x - 6 = 0$

(c) $x^2 - x + 6 = 0$ (d) $x^2 + x + 6 = 0$

36. If the sum of the three consecutive terms of A.P. is 48 and the product of the first and the last is 252, then d = _____.

(a) 2 (b) 3

(c) 4 (d) 16

37. If 2k + 1, 13, 5k – 3 are three consecutive terms of A.P. then k = _____.

(a) 17 (b) 13

(c) 4 (d) 9

38. Correspondence ABC $\leftrightarrow$ DEF of Δ ABC and Δ DEF is similarity if AB + BC = 10 and DE + EF = 12 and AC = 6, then DF = _____.

(a) 6 (b) 5

(c) 7.2 (d) 16

39. The lengths of the sides of Δ DEF are 4, 6, 8 Δ DEF $\sim$ Δ PQR for correspondence DEF $\leftrightarrow$ QPR. If the perimeter of Δ PQR = 36, then the length of the smallest side of Δ PQR is = _____.

(a) 6 (b) 2

(c) 4 (d) 8

40. In Δ XYZ, m $\angle x$: m $\angle$ y : m $\angle$ z = 1 : 2 : 3. If XY = 15, YZ = _____.

(a) 5.7 (b) 17

(c) 8 (d) 7.5

41. If Δ ABC, m $\angle$ A = 90, $\overline{AD}$ is a median. If AD = 6, AB = 10, then AC = _____.

(a) $2\sqrt{11}$ (b) 8

(c) 7.5 (d) 16

42. A(0, 0), B(3, 0), C(3, 4) are the vertices of a _____ triangle.

(a) equilateral (b) right angled

(c) isosceles (d) acute angled

43. The value tan 20º tan 25º tan 45º tan 65º tan 70º is _____.

(a) –1 (b) 1

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

44. The tops of two poles of height 18 m and 12 m are connected by a wire if the wire makes an angle of measure 30º with horizontal then the length of the wire is _____.

(a) 12 m (b) 10 m

(c) 8 m (d) 4 m

45. A chord of $\odot$ (0, 5) touches $\odot$ (0, 3). Therefore the length of the chord = _____.

(a) 10 (b) 7

(c) 8 (d) 6

46. The area of the largest triangle inscribed in a semi-circle of radius 8 is _____.

(a) 8 (b) 16

(c) 256 (d) 64

47. The radii of a frustum of a cone are 5 cm and 9 cm and height is 6 cm, then the volume is _____ cm^3.

(a) 320π (b) 302π

(c) 151π (d) 98π

48. If $\bar{x} - 2 = 3$ and $\bar{x} + 2 = 45$ then M = _____.

(a) 24 (b) 22

(c) 26 (d) 23

49. The sum of the probability of all the elementary events of an experiment is _____.

(a) 0 (b) 0.2

(c) 1 (d) 0.8

50. The diameter and the height of the cylinder are 14 cm and 10 cm respectively then the total surface area is _____cm^2.

(a) 44 (b) 308

(c) 1010 (d) 748