

1. The number of elements in power set of $\{1,2,3\}$ is:
 (a) 4 (b) 6 (c) 8 (d) None of these
2. A histogram is a set of adjacent:
 (a) Squares (b) Rectangles (c) Circles (d) None of these
3. If $\tan\theta = \sqrt{3}$ then θ is equal to:
 (a) 90° (b) 45° (c) 60° (d) None of these
4. $(x + 3)^2 = x^2 + 6x + 9$ is a/ an:
 (a) Linear equation (b) Equation (c) Identity (d) None of these
5. If $b^2 - 4ac > 0$ but not a perfect square then roots of $ax^2 + bx + c = 0$ are:
 (a) Imaginary (b) Rational (c) Irrational (d) None of these
6. In a ratio $x : y$, y is called:
 (a) Relation (b) Antecedent (c) Consequent (d) None of these
7. Two tangents drawn to a circle from a point outside it are of..... in length:
 (a) Half (b) Equal (c) Double (d) None of these
8. Point $(-1, 4)$ lies in the quadrant:
 (a) I (b) II (c) III (d) None of these
9. Two linear factors of $x^2 - 15x + 56$ are:
 (a) $(x - 7) \& (x + 8)$ (b) $(x + 7) \& (x - 8)$ (c) $(x - 7) \& (x - 8)$ (d) None of these
10. If A and B are disjoint sets then $A \cup B$ is equal to:
 (a) A (b) B (c) ϕ (d) None of these
11. The semi circumference and the diameter of a circle both subtend a central angle of:
 (a) 90° (b) 180° (c) 270° (d) None of these
12. The symbol for a triangle is denoted by:
 (a) $<$ (b) Δ (c) $\perp$ (d) None of these
13. The length of the diameter of a circle is how many times the radius of the circle:
 (a) 1 (b) 2 (c) 3 (d) None of these
14. If $u \propto v^2$
 (a) $u = v^2$ (b) $u = kv^2$ (c) $uv^2 = k$ (d) None of these
15. $\frac{1}{\alpha} + \frac{1}{\beta}$ is equal to:
 (a) $\frac{1}{\alpha}$ (b) $\frac{1}{\alpha} - \frac{1}{\beta}$ (c) $\frac{\alpha - \beta}{\alpha\beta}$ (d) None of these
16. $\frac{2x+1}{(x+1)(x-1)}$ is:
 (a) An improper fraction (b) An equation (c) A proper fraction (d) None of these
17. Radii of circle are:
 (a) All equal (b) Double of diameter (c) All unequal (d) None of these
18. An angle inscribed in a semi circle is:
 (a) $\frac{\pi}{2}$ (b) $\frac{\pi}{3}$ (c) $\frac{\pi}{4}$ (d) None of these

19. Tangents drawn at the end point of the diameter of a circle are to each other:

- (a) Parallel (b) Non parallel (c) Collinear (d) None of these

20. The solution set of equation $4x^2 - 16 = 0$ is:

- (a) $\{\pm 4\}$ (b) $\{4\}$ (c) $\{\pm 2\}$ (d) None of these

21. $\alpha^2 + \beta^2$ is equal to:

- (a) $\alpha^2 - \beta^2$ (b) $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ (c) $(\alpha + \beta)^2 - 2\alpha\beta$ (d) None of these

22. A frequency polygon is a many sided:

- (a) Closed figure (b) Rectangle (c) Circle (d) None of these

23. If an arc of a circle subtends a central angle of 60° , then the corresponding chord of the arc will make the central angle:

- (a) 20° (b) 40° (c) 60° (d) None of these

24. $\operatorname{cosec}^2\theta - \cot^2\theta = \dots\dots\dots$

- (a) -1 (b) 1 (c) 0 (d) None of these

25. If α, β are the roots of $7x^2 - x + 4 = 0$, then $\alpha\beta$ is:

- (a) $\frac{-1}{7}$ (b) $\frac{4}{7}$ (c) $\frac{7}{4}$ (d) None of these

26. If $\frac{u}{v} = \frac{v}{w} = k$, then:

- (a) $u = wk^2$ (b) $u = vk^2$ (c) $u = w^2k$ (d) None of these

27. Power set of an empty set is:

- (a) ϕ (b) $\{a\}$ (c) $\{\phi, \{a\}\}$ (d) None of these

28. How many tangents can be drawn from a point outside the circle:

- (a) 1 (b) 2 (c) 3 (d) None of these

29. The measure of a central angle of minor arc of a circle is that of the angle subtended by the corresponding major arc:

- (a) Half (b) Equal (c) Double (d) None of these

30. The length of a chord and the radial segment of a circle are congruent, then central angle made by the chord is:

- (a) 30° (b) 45° (c) 60° (d) None of these

31. A line which has only one point in common with the circle is called:

- (a) Sine (b) Cosine (c) Tangent (d) None of these

32. A chord passing through the center of a circle is called:

- (a) Radius (b) Diameter (c) Circumference (d) None of these

33. $\sec^2\theta = \dots\dots\dots$

- (a) $1 - \sin^2\theta$ (b) $1 + \tan^2\theta$ (c) $1 + \cot^2\theta$ (d) None of these

34. The spread or scatterness of observations in a data is called:

- (a) Average (b) Dispersion (c) Central tendency (d) None of these

35. If $A \subseteq B$, then $A \cap B$ is:

- (a) A (b) B (c) ϕ (d) None of these

36. If $R = \{(0, 2), (2, 3), (3, 3), (3, 4)\}$ then Dom R is:

- (a) $\{0, 3, 4\}$ (b) $\{0, 2, 3\}$ (c) $\{0, 2, 4\}$ (d) None of these

37. Partial fraction of $\frac{x-2}{(x-1)(x+2)}$ are of the form:

- (a) $\frac{A}{x-1} + \frac{B}{x+2}$ (b) $\frac{Ax}{x-1} = \frac{B}{x+2}$ (c) $\frac{A}{x-1} + \frac{Bx+c}{x+2}$ (d) None of these

38. The third proportional of x^2 and y^2 is:

- (a) $\frac{y^2}{x^2}$ (b) $x^2 y^2$ (c) $\frac{y^4}{x^2}$ (d) None of these

39. If $\frac{a}{b} = \frac{c}{d}$ then componendo property is:

- (a) $\frac{a}{a+b} = \frac{c}{c+d}$ (b) $\frac{a}{a-b} = \frac{c}{c-d}$ (c) $\frac{ad}{bc} = 1$ (d) None of these

40. If α, β are the roots of $x^2 - x - 1 = 0$, then product of $2\alpha, 2\beta$ is:

- (a) -2 (b) 2 (c) 4 (d) None of these

41. The sum of the roots of $4x^2 - 3x + 6 = 0$ is:

- (a) $\frac{3}{4}$ (b) $-\frac{3}{4}$ (c) $\frac{4}{3}$ (d) None of these

42. $A \cup (B \cap C) =$ _____

- (a) $(A \cup B) \cap (A \cup C)$ (b) $A \cap (B \cap C)$ (c) $(A \cap B) \cup (A \cap C)$ (d) None of these

43. Find x in proportion $4 : x :: 5 : 15$

- (a) $\frac{75}{4}$ (b) $\frac{4}{3}$ (c) $\frac{3}{4}$ (d) None of these

44. Fourth proportional w of $x : y :: v : w$ is:

- (a) $\frac{xy}{v}$ (b) $\frac{vy}{x}$ (c) xyv (d) None of these

45. An arc subtends a central angle of 40° then the corresponding chord will subtend a central angle of:

- (a) 20° (b) 40° (c) 60° (d) None of these

46. A tangent line intersects the circle at:

- (a) Three points (b) Two points (c) Single point (d) None of these

47. A complete circle is divided into:

- (a) 90° (b) 180° (c) 270° (d) None of these

48. Mean is affected by change in:

- (a) Value (b) Ratio (c) Origin (d) None of these

49. A collection of well-defined distinct objects is called:

- (a) Subset (b) Power set (c) Set (d) None of these

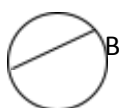
50. A grouped frequency table is also called:

- (a) Data (b) Frequency distribution (c) Frequency Polygon (d) None of these

51. The union of two non-collinear rays, which have common end point is called:

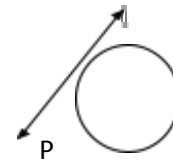
- (a) An angle (b) A degree (c) A minute (d) None of these

52. In the circle figure ADB is called:



A

- (a) An arc (b) An secant (c) A chord (d) None of these
53. A 4cm long chord subtends a central angle of 60. The radius segment of this circle is:
 (a) 1cm (b) 2cm (c) 3cm (d) None of these
54. The circumference of a circle is called:
 (a) Tangent (b) Chord (c) segment (d) None of these
55. The number of terms in standard quadratic equation $ax^2 + bx + c = 0$ is:
 (a) 1 (b) 2 (c) 3 (d) None of these
56. The discriminant of $ax^2 + bx + c = 0$ is:
 (a) $b^2 - 4ac$ (b) $b^2 + 4ac$ (c) $-b^2 + 4ac$ (d) None of these
57. A pair of chord of a circle subtending two congruent central angles is:
 (a) Congruent (b) Incongruent (c) Overlapping (d) None of these
58. Cube roots of -1 are:
 (a) $-1, -\omega, -\omega^2$ (b) $-1, \omega, -\omega^2$ (c) $-1, -\omega, \omega^2$ (d) None of these
59. Sum of the cube roots of unity is:
 (a) 0 (b) 1 (c) -1 (d) None of these
60. If $a:b=x:y$ then alternando property is:
 (a) $\frac{a}{x} = \frac{b}{y}$ (b) $\frac{a}{a-b} = \frac{x}{x-y}$ (c) $\frac{a+b}{b} = \frac{x+y}{y}$ (d) None of these
61. A fraction in which the degree of numerator is less than the degree of denominator, is called:
 (a) An equation (b) An improper fraction (c) An identity (d) None of these
62. If $A \subseteq B$ then $A - B$ is equal to:
 (a) A (b) B (c) ϕ (d) None of these
63. Right bisectors of the chord of a circle always pass through the:
 (a) Radius (b) Circumference (c) Centre (d) None of these
64. A circle has only one:
 (a) Secant (b) Chord (c) Diameter (d) None of these
65. Cube roots of "1" are
 (a) $-1, -\omega, -\omega^2$ (b) $-1, \omega, -\omega^2$ (c) $-1, -\omega, \omega^2$ (d) None of these
66. Quadratic formula is
 (a) $\frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$ (b) $\frac{b \pm \sqrt{b^2 - 4ac}}{2a}$ (c) $\frac{-b \pm \sqrt{b^2 + 4ac}}{2a}$ (d) None of these
67. The different number of ways to describe a set are
 (a) 1 (b) 2 (c) 3 (d) None of these
68. In the adjacent figure of the circle the line PTQ is named as
 (a) An arc (b) c chord (c) a tangent (d) None of these
69. $\cot 60^\circ =$ _____
 (a) $\frac{1}{\sqrt{3}}$ (b) $\sqrt{3}$ (c) $\frac{1}{2}$ (d) None of these
70. In the circular figure AOB is called.



- (a) An arc (b) a secant A (c) a chord (d) None of these
- 71. $\alpha^3 - \beta^3$ is equal to**
- (a) $\alpha^2 - \beta^2$ (b) $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$ (c) $(\alpha + \beta)^2 - 2\alpha\beta$ (d) None of these
- these
- 72. if $A \subseteq B$ then $A \cup B$ is equal to:**
- (a) A (b) B (c) ϕ (d) None of these
- 73. The set $\{x | x \in \mathbb{W} \wedge x \leq 101\}$ is called:**
- (a) Infinite (b) subset (c) null set (d) None of these
- 74. Number of Pythagorean identities are**
- (a) 1 (b) 2 (c) 3 (d) None of these
- 75. The opposite angles of any quadrilaterals inscribed in a circle are.**
- (a) 90° (b) 180° (c) 270° (d) None of these

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