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TS POLYCET 2024 Question Paper with Solution

Telangana State Polytechnic Common Entrance Test

TS POLYCET 2024 Question Paper

Ques 1. (6 + 5√3) - (4 - 3√3) is
Ans. (2) Irrational Number

Ques 2. Which of the following rational number have terminating decimal?
Ans. (1) 7/250

Ques 3. H.C.F. of 2023, 2024, 2025 is
Ans 3. (4) 1

Ques 4. The value of log6(2) + log6(3) is
Ans. (2) 1

Ques 5. Exponential form of logb(a) = c
Ans . (3) ab = c

Ques 6. The product of prime factors of 2024 is
Ans. (2) 23 x 11 x 23

Ques 7. Which of the following two sets are equal sets?
Ans. (3) A = {5, 6, 7}, B = {7, 5, 6}

Ques 8. {0} is a set which has _____ elements.
Ans. (2) 1

Ques 9. If P(x) = 11x^8 - 5x^6 + 4x^4 - 7x^2 + 6, then the degree of P(x) is
Ans. (1) 8

Ques 10. If -1, -2 are two zeros of a polynomial $2x^3 + ax^2 + bx - 2$, then the values of a and b are
Ans. (3) 5, 1

Ques 11. If α, β are the zeros of the polynomial $P(x) = 3x^2 - x - 4$ then α * β =
Ans. (1) -4/3

Ques 12. Which of the following equation represent the situation where Kiran bought 5 oranges, 7 apples and Harish bought 2 oranges, 12 apples for the same amount of total money?
Ans. (2) 5x + 7y = 2x + 12y

Ques 13. If $2/\sqrt{x} + 3/\sqrt{y} = 2$ and $4/\sqrt{x} - 9/\sqrt{y} = -1$, then
Ans. (3) x = 4, y = 3

Ques 14. The pair of equations x + y = 5 and 2x + 2y = k has infinitely many solutions if k =
Ans. (4) 10

Ques 15. If $a1/a2 \neq b1/b2$, where $a1x + b1y + c1 = 0$ and $a2x + b2y + c2 = 0$ are two linear equations, then the equations
Ans. (1) have a unique solution

Ques 16. The value of p, for which the pair of equations 3x + 4y + 2 = 0 and 9x + py + 8 = 0 represents parallel lines, is
Ans. (4) 12

Ques 17. The roots of the quadratic equation $x^2 - 4x + 4 = 0$ are
Ans. (2) 2, 2

Ques 18. The sum of the roots of the quadratic equation $3x^2 - 5x + 2 = 0$ is
Ans. (1) 5/3

Ques 19. Sum of the areas of two squares is 625m^2. If the difference of their perimeters is 20 m, find the sides of the two squares.
Ans. (3) 20 m, 15 m

Ques 20. The discriminant of the quadratic equation 3x^2 - 2x + 1/3 = 0 is
Ans. (3) 0

Ques 21. Which term of the A.P. 20, 18, 16, ... is '-80'?
Ans. (2) 51

Ques 22. How many two-digit numbers are divisible by 3?
Ans. (3) 30

Ques 23. In a GP, the 3rd term is 24 and the 6th is 192, then the 10th term is
Ans. (2) 3072

Ques 24. The common ratio of G. P. : 25, -5, 1, -1/5
Ans . (1) -1/5

Ques 25. The distance between the points (x1, y1) and (x2, y2) is
Ans. (1) √(x2 - x1)^2 + (y2 - y1)^2

Ques 26. The coordinates of the point which divides the line segment joining the points (4, -3) and (8, 5) in the ratio 3:1 internally is
Ans. (2) (7, 3)

Ques 27. The centroid of the triangle with vertices (1,-1), (0, 6), and (-3,0) is
Ans. (3) (-2/3, 5/3)

Ques 28. Area of the triangle formed by the points (-5, -1), (3, -5), and (5, 2) is
Ans. (1) 32

Ques 29. In ΔABC, if DE || BC, AE/CE = 3/5 and AB = 5.6 cm, then AD =
Ans. (2) 2.1 cm

Ques 30. In ∆ABC, DE || BC. If AD = x, DB = x - 2, AE = x + 2, and EC = x - 1, then the value of x =
Ans. (4) 4

Ques 31. A girl of height 90 cm is walking away from the base of a lamppost at a speed of 120 cm/sec. If the lamppost is 360 cm above the ground, then the length of her shadow after 4 seconds is _____.
Ans. (3) 160 cm

Ques 32. If the ratio of corresponding sides of two similar triangles is 2:3, then the ratio of areas of these triangles is _____.
Ans. (1) 2:3

Ques 33. If ABC is a right triangle right-angled at 'C' and let BC = a, CA = b, AB = c and let p be the length of the perpendicular from C on AB, then _____.
Ans . (1) cp = ab

Ques 34. If the areas of two similar triangles are 81 cm² and 49 cm² respectively. If the altitude of the smaller triangle is 3.5 cm, then the corresponding altitude of the bigger triangle is _____.
Ans. (4) 4.5 cm

Ques 35. A tangent to a circle touches it in _____ point(s).
Ans. (1) one

Ques 36. There are exactly _____ tangents to a circle through a point outside the circle.
Ans. (1) two

Ques 37. The length of the tangent from a point 15 cm away from the center of a circle of radius 9 cm is _____.
Ans . (4) 12 cm

Ques 38. If AP and AQ are the two tangents to a circle with center 'O', so that ∠POQ = 110°, then ∠PAQ = _____.
Ans . (2) 70°

Ques 39. If two concentric circles of radii 5 cm and 3 cm are drawn, then the length of the chord of the larger circle which touches the smaller circle is _____.
Ans . (3) 8 cm

Ques 40. The area of a sector, whose radius is 7 cm with the angle 72° is _____. (Use π = 22/7)
Ans . (2) 30.8 cm^2

Ques 41. If a right circular cylinder has a base radius of 14 cm and height 21 cm, then its curved surface area is _____. (Use π = 22/7)
Ans. (3) 3080 cm^2

Ques 42. The volume of a right circular cone with a radius of 6 cm and height 7 cm is _____. (Use π = 22/7)
Ans (1) 264 cm^3

Ques 43. If a cylinder and a cone have bases of equal radii and are of equal heights, then their volumes are in the ratio of _____.
Ans. (3) 3 : 1

Ques 44. If two cubes each of volume 64 cm^3 are joined end to end together, then the surface area of the resulting cuboid is _____.
Ans. (2) 160 cm^2

Ques 45. The value of sin215° + cos215° is

Ans. (2) 1

Ques 46. A chord of a circle of radius 4 cm is making an angle 60° at the center, then the length of the chord is
Ans. (4) 4 cm

Ques 47. If $\text{cosec}\theta + \cot\theta = k$, then the value of $\text{cosec}\theta$ is
Ans. (3) $(k^2 - 1) / (k^2 + 1)$