TS Polycet 2025 Memory Question Paper

1. The roots of the quadratic equation $x^2 - 16 = 0$ are:

(1) $4, -4$

(2) $8, -8$

(3) $16, -16$

(4) $2, -2$

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2. If α, β are the roots of $2x^2 - 4x + 5 = 0$, then $(\alpha + 1)(\beta + 1) =$:

(1) $\frac{11}{2}$

(2) 2

(3) 1

(4) 0

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3. The value of $\frac{1 - \tan^2 45^\circ}{1 + \tan^2 45^\circ}$ is:

(1) 1

(2) 0

(3) -1

(4) ∞

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4. The value of $1 + \sec 19^\circ \sin 71^\circ$ is:

(1) 2

(2) 1

(3) 3

(4) 1.5

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5. The pair of linear equations $2x - 3y = 8$ and $4x - 6y = 9$ represents the following:

(A) The system has a unique solution.

(B) The system has infinitely many solutions.

(C) The system has no solution.

(D) The system represents two parallel lines.

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6. The solution of system of equations $\frac{x}{2025} + \frac{y}{2026} = 2$ and $\frac{2x}{2025} - \frac{y}{2026} = 1$ is:

(1) $x = 4025, \quad y = 2026$

(2) $x = 4040, \quad y = 2025$

(3) $x = 2025, \quad y = 2026$

(4) $x = 4030, \quad y = 2027$

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7. The roots of quadratic equation $2x^2 + x - 4 = 0$ are:

(1) $\frac{-1+\sqrt{33}}{4}, \quad \frac{-1+\sqrt{33}}{2}$

(2) $\frac{-1+\sqrt{33}}{2}, \quad \frac{-1+\sqrt{33}}{4}$

(3) $\frac{1+\sqrt{33}}{4}, \quad \frac{1+\sqrt{33}}{2}$

(4) $\frac{1+\sqrt{33}}{2}, \quad \frac{1+\sqrt{33}}{4}$

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8. The total surface area of a hemisphere solid having radius 7 cm is:

(1) $616\ cm^2$

(2) $462\ cm^2$

(3) $147\ cm^2$

(4) $154\ cm^2$

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9. If $4\frac{5}{x+1} + \frac{1}{y-3} = 2$ and $\frac{6}{x+1} - \frac{3}{y-3} = 1$, then $x = \ldots$:

(1) 1

(2) 2

(3) 3

(4) 4

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10. Which term of G.P. $2, 2\sqrt{2}, 4, \ldots$ is 128?

(1) 7

(2) 8

(3) 1

(4) 3

(4) 10

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11. The terms 4, 7, 10, . . . form an A.P. The sum of the first 15 terms is?

(A)

340

(B)

360

(C)

375

(D)

390

(1)6

(2)7

(3)8

(4)9

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12. If a line is passing through the points (2, 5) and (x, 3) and its slope is 2. Then the value of 'x' is?

13. The distance of point (2, 4) from the x-axis is?

(A)2

(B)4

(C)6

(D)8

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14. The area of the triangle with vertices $(1, 1), (-4, 6), (-3, -5)$ is?

(1)

20

(2)

24

(3)

30

(4)

35

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15. If $A = 45^\circ$, then the value of $\sin A + \cos A + \cos 2A$ is?

(A) $\sqrt{2}$

(B)1

(C)2

(D)0

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16. $\cot(90^\circ - \theta) = ?$

(A) $\sin\theta$

(B) $\cos\theta$

(C) $\tan\theta$

(D) $\sec\theta$

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17. If A is the set of odd numbers less than 6 and B is the set of prime factors of 30, then:

(1) $A \cup B = \{1, 3, 5, 2, 3, 5\}$ $A \cap B = \{3, 5\}$

(2) $A = B$ $A \cup B = \{1, 3, 5, 2, 3\}$

(3)

(4)

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18. If the pair of equations $3x+4y=k$ and $9x+12y=6$ has infinite number of solutions, then the value of k is:

(A)1

(B)2

(C)3

(D)4

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19. The product of the zeroes of a polynomial $x^3 - 3x^2 + x + 1$ is:

(A)1

(B) -1

(C)3

(D) -3

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20. The sum of the first n natural numbers is:

(A) $\frac{n(n+1)}{2}$

(B) $\frac{n(n-1)}{2}$

(C) n^2

(D) $n(n+1)$

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21. In the sequence $18, a, 14, 32$, the common difference is:

(1) 2

(2) 8

(3) 4

(4) 6

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22. If $x < 0$ and $y > 0$, then the point $P(x, y)$ is in which quadrant?

(1) First Quadrant

(2) Second Quadrant

(3) Third Quadrant

(4) Fourth Quadrant

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23. What is the value of $\csc 31^\circ \sec 59^\circ$?

(1) 0 (2) 1 (3) Undefined

(4) 2

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24. If a, b, c are in A.P., then $\frac{a-b}{b-c}$ is equal to:

(1) 1 (2) 2

(3) 0 (4) Undefined

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25. If a, b, c are in A.P., then $\frac{a-b}{b-c}$ is equal to:

1.1 2.2 3.0

4.

Undefined

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26. If $A = \{1, 2, 3, 4, 5\}$ and $B = \{1, 3, 5, 7\}$, then $n(A \cap B) = \ldots$:

(1) 3

(2) 4

(3) 2

(4) 1

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27. The zeroes of the quadratic polynomial $x^2 + x - 2$ are:

(1) $-2, 1$

(2) $-1, 2$

(3) $1, 2$

(4) $-1, -2$

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28. Which of the following statement regarding the probability of an event is correct?

(1) Probability of an event is always negative. (2) Probability of an event is always between 0 and 1.

(3) Probability of an event is always greater than 1. (4) Probability of an event is always greater than 0.

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29. What is the probability of getting a number 7 in a single throw of a dice?

(1) 0

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

(3) $\frac{1}{12}$

(4) $\frac{1}{36}$

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30. If one card is selected from a well-shuffled deck of 52 cards, then the probability of getting an ace card is:

(1 $\frac{4}{52}$

) $\frac{1}{13}$

(2 $\frac{1}{52}$

) $\frac{4}{13}$

(3

)

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31. The mean of 20, 30, 38, 40, 50, 56, 60 is:

(A

) (A) 42

(B) 44

(C) 46

(D)

48

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32. If the equations $x+2y=5$ and $3x+ ky=10$ are inconsistent, then the value of k is:

(A)4

(B)6

(C)8

(D)

10

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33. If the pair of linear equations $a1x + b1y + c1 = 0$ and $a2x + b2y + c2 = 0$ represent coincident lines, then:

(A) $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$

(B) $\frac{a_1}{a_2} = \frac{c_1}{c_2}$

(C) $\frac{a_1}{a_2} = \frac{c_1}{c_2}$

(D) $\frac{b_1}{b_2}$ —

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34. From the top of the tower 60 meters high, the angle of depression of an object is 60°, then the distance of the object from the base of the tower is:

(A) $\frac{60}{\sqrt{3}}$ m

(B) $60\sqrt{3}$ m

(C) 0 m

(D) $\frac{60}{\sqrt{3}}$ m

0

35. The angle of elevation of the top of the building from a point 10 meters away from the base of the building is 60°, then the height of the building is:

(A) $\frac{10}{\sqrt{3}}$ m

(B) $10\sqrt{3}$ m

(C) 0 m

(D) $\frac{10}{3}$ m

0

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36. $5 + \sqrt{7}$ is:

(A) an irrational number

(B) a rational number

(C) an integer

(D) a whole number

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37. If x, y and z are distinct prime numbers, then the H.C.F. of x^2y^3z and x^3yz^2 is:

(A) x^2yz

(B) xyz^2

(C) $x^3y^3z^3$

(D) $x^2y^2z^2$

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38. The value of $\log_3 81$ is:

(A)2 (B)3 (C)4

(D)5

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39. What is the median of 18, 14, 6, 7, 8?

(A)7 (B)8 (C)6

(D) 14

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40. If the mean of $x, y, 3, 4$ is 5, then $x+y$ =?

(A)8

(B)

13

(C)

15

(D)9

---

41. The mean and mode of 5, 3, 9, 1, 9, 8, 9, 4 are m and n respectively, the value of m+n is?

(A) 12

(B) 15

(C) 14

(D)

10

---

42. LCM of 9, 12 and 15 is?

(A) 90

(B)

180

(C) 60

(D) 45

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43. Median of $x, 20x, \frac{x}{20}, 200x, \frac{x}{200}$ (where $x > 0$) is 20, then the value of x is:

(A) 20

(B) 40

(C) 10

(D)

30

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44. If $3^x = 9^{x-1}$, then the value of x is:

(A)2

(B)1

(C)0

(D)3

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45. Mode of the data 19, 2, 6, 12, 12, 3, 5, 6, 18, 14, 6, 17 is:

(A)6

(B)

12

(C)2

(D)3

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46. In $\triangle ABC$, $DE /\!/ BC$ if $AD = x+1$, $DB = 3x - 1$, $AE = x$, and $EC = 4x - 3$, then the value of x is:

(A)1

(B)2

(C)3

(D)4

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47. In $\triangle ABC$, if $AB = 6\sqrt{3}$ cm, $AC = 12$ cm and $BC = 6$ cm, then the angle B is:

(A) 90°

(B) 60°

(C) 45°

(D) 30°

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48. A regular brick is in the shape of:

(A) Cube

(B) Cuboid

(C) Cone

(D) Cylinder

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49. A cylinder and a cone have bases of equal radii and heights, then the ratio of volumes is:
(A) 3:1 (B) 2:1 (C) 1:1 (D) 4:1

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50. The ratio of the areas of two similar triangles is equal to the ratio of the—— their corresponding sides.
(A) Cube of
(B) Square of
(C) Square root of
(D) Twice of

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51. In $\triangle PQR$, $ST \parallel QR$, $PQ = 12$ cm, $PR = 24$ cm, and $SP = 4$ cm, then $PT =$
(A) 8 cm
(B) 6 cm
(C) 12 cm (D) 10 cm

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52. The maximum number of parallel tangents that can be drawn to a circle is:
(A)2 (B)3 (C)4 (D)1

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53. The parallelogram circumscribing a circle is a:
(A) Square
(B) Rectangle
(C) Rhombus

(D) Trapezium

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54. $\log 2$ is:

(A) A rational number

(B) An irrational number

(C) A whole number

(D) An integer

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55. The distance between two parallel tangents of a circle of radius 4 cm is:

(A) 8 cm

(B) 4 cm

(C) 16 cm (D) 2 cm

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56. In $\triangle ABC$, DE is a line such that $\frac{AD}{DB} = \frac{AE}{EC}$ and $\angle EDA = \angle ACB$, then $\triangle ABC$ is a/an:

(A) Scalene triangle

(B) Isosceles triangle

(C) Equilateral triangle

(D) Right-angled triangle

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57. All the circles are ——:

(A) Different

(B) Similar

(C) Equal

(D) Congruent

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58. If the angle between two radii of a circle is 120°, then the angle between the tangent and the ends of the radii is:

(A) 30°

(B) 60°

(C) 90°

(D) 120°

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59. A line which intersects a circle at two points is called as:

(A) Secant

(B) Tangent

(C) Chord

(D) Arc

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60. In the given figure, if $\angle AOB = 125^\circ$, then $\angle COD =$:

(A) 125°

(B) 55°

(C) 90°

(D) 45°
