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Register No. [ ]

Revision Test - 2025

MATHEMATICS

Time : 2.30 Hours Marks : 100

14x1=14

I. Choose the best answer

1. If A∪B = A∩B, then
   a) A≠B b) A=B c) ACB d) BCA
2. For any three sets P,Q and R, P-(Q∩R) is .....
   a) P-(Q∪R) b) (P ∩ Q)-R c) (P-Q)∪(P-R) d) (P-Q)∩(P-R)
3. Which one of the following is an irrational number?
   a) $\sqrt{25}$ b) $\sqrt{9/4}$ c) $\frac{7}{11}$ d) π
4. If $\sqrt{80} = k\sqrt{5}$, then k= .....
   a) 2 b) 4 c) 8 d) 16
5. If $x^{51}+51$ is divided by x+1 then the remainder is .....
   a) 0 b) 1 c) 49 d) 50
6. If (x-3) is a factor of p(x), then the remainder is .....
   a) 3 b) -3 c) p(3) d) p(-3)
7. The angles of a triangle are (3x-40)°, (x+20)° and (2x-10)°, then the value of x is .....
   a) 40° b) 35° c) 50° d) 45°
8. The interior angle made by the side in a parallelogram is 90°, then the parallelogram is a .....
   a) rhombus b) rectangle c) trapezium d) kite
9. The distance between the point (5,-1) and the origin is .....
   a) $\sqrt{24}$ b) $\sqrt{37}$ c) $\sqrt{26}$ d) $\sqrt{17}$
10. The point whose ordinate is 4 and which lies on the yaxis is .....
    a) (4,0) b) (0,4) c) (1,4) d) (4,2)
11. The value of tan1°, tan2°, tan3°....tan89° is .....
    a) 0 b) 1 c) 2 d) $\frac{\sqrt{3}}{2}$
12. If 2 sin 2θ = $\sqrt{3}$, then the value of θ is .....
    a) 90° b) 30° c) 45° d) 60°
13. The lateral surface area of a cube of side 12 cm is .....
    a) 144 cm^2 b) 196 cm^2 c) 576 cm^2 d) 664 cm^2
14. If the sides of a triangle are 3cm, 4cm and 5 cm, then the area is
    a) 3 cm^2 b) 6 cm^2 c) 9 cm^2 d) 12 cm^2

II. Answer any 10 questions. (Q.No 28 is compulsory) 10x2=20

15. Verify whether A = {20, 22, 23, 24} and B={25, 30, 40,45} are disjoint sets
16. If n(A) = 36, n(B) =10 n(AUB)=40 and $n(A^1)$=27 find n(U) and n(A∩B).
17. Express the decimal expression $3.\overline{17}$ into rational number.
18. Multiply $\sqrt[3]{40}$ and $\sqrt[3]{16}$
19. Expand $(a-b+c)^2$
20. Factorise: $9-18x+8x^2$
21. If the angles of a the triangle are in the ratio 1:2:3, then find each angle of the triangle.
22. A chord is 12 cm away from the centre of the circle of radius 15 cm. Find the length of the chord.
23. Find the distance between the points (3, -9) and (-2, 3)
24. The arithmetic mean of 6 values is 45, if each value is increased by 4, then find the arithmetic mean of new set of values.
25. If $\sin\theta = \frac{a}{\sqrt{a^2+b^2}}$ then prove that b sin θ = a cos θ
26. Factorise x^4-16 using a suitable identity.

27. Find the area of an equilateral triangle whose perimeter is 180 cm.
28. If the total surface area of a cube is 2400cm² then find its lateral surface area.

III. Answer any 10 questions (Q.No. 42 is compulsory) **10x5=50**

29. If A = {x:x∈z, -2<x≤4}, B= {x:x∈W, x≤5}, C= {-4, -1, 0, 2, 3, 4} then verify A∩(B∪C) = (A∩B) ∪(A∩C)
30. In a school all students play Hockey or Cricket or both. 300 play Hockey, 250 play cricket and 110 play both games. Find,
    i) the number of students who play only Hockey.
    ii) the number of students who play only Cricket.
    iii) the total number of students in the school.
31. Compute and give the answer in the simplest form : $2\sqrt{72} \times 5\sqrt{32} \times 3\sqrt{50}$
32. If $\frac{\sqrt{7}-2}{\sqrt{7}+2} = a\sqrt{7}+b$, then find the value of 'a' and 'b'
33. Factorise $x^3+13x^2+32x+20$ into linear factors
34. In a parallelogram ABCD, the bisectors of the consecutive angles ∠A and ∠B intersect at P. Show that ∠APB = 90°.
35. Using section formula show that the points A (7,-5) B(9,-3) C(13,1) are collinear.
36. Verify that the following points taken in order form the vertices of a rhombus A(3,-2) B(7,6) C(-1, 2) D(-5, -6)
37. Find the length of the median through 'A' of a triangle whose vertices are A(-1,3) B(1,-1) C(5, 1)
38. Evaluate: tan 7° tan 23° tan 60° tan 67° tans 83°
39. Find the angle made by a ladder of length 5.m with the ground, if one of its end is 4m away from the wall and the other end is on the wall.
40. The dimensions of a fish tank are 3.8 m x 2.5 m x 1.6 m. How many litres of water it can hold?
41. Calculate the mean of the following distribution using assumed mean method.

Class Interval	0-10	10-20	20-30	30-40	40-50
frequency	5	7	15	28	8

42. Verify using Venn Diagram: A∩(B∪C) = (A∩B)∪(A∩C)

IV. Answer all questions **2x8=16**

43. a) Construct a ΔPQR whose sides are PQ= 6cm, ∠Q=60°, QR=7 cm and locate its orthocentre.

(OR)

b) Construct the incentre of ΔABC with AB=6 cm ∠B=65° and AC=7cm. Also draw the incircle and measure its radius.

44. a) Draw the graph of y = 3x - 1

(OR)

b) Solve graphically 3x+2y=6; 6x + 4y = 8