SECOND MID TERM - 2024

MATHEMATICS

Class: 9

Total Marks :50

Time : 1.30 Hrs

PART- I

Note: Choose the correct answer and write it with correct option.   **7×1=7**

1. If one angle of a cyclic quadrilateral is 75°, then the opposite angle is

    (1)100°   (2)105°   (3)85°   (4)90°

2. AD is a diameter of a circle and AB is a chord if AD = 30cm and AB = 24cm then the distance of AB from the centre of the circle is

    (1)10cm   (2) 9cm   (3) 8cm   (4) 6cm

3. The point whose ordinate is 4 cm which lies on the y-axis is

    (1) (4, 0)   (2) (0, 2)   (3) (1, 4)   (4) (4, 2)

4. If $(x + 2) = (5, y - 2)$, then the coordinates (x, y) are

    (1) (7,12)   (2) (6, 3)   (3) (3, 6)   (4) (2, 1)

5. The mid-point of the line joining $(-a, 2b)$ and $(-3a, -4b)$ is

    (1) (2a, 3b)   (2) (-2a, -b)   (3) (2a, b)   (4) (-2a, -3b)

6. If $(1, -2)$, $(3, 6)$, $(x, 10)$ and $(3, 2)$ are the vertices of the parallelogram taken in order, then the value of x is

    (1) 6   (2) 5   (3) 4   (4) 3

7. $A(4,1)$ and $B(x, y)$ are the end points of the line segment and point $P(7,5)$ divided the line segment into equal parts. Find the coordinates of B are

    (1) (10, 9)   (2) (5.5, 3)   (3) (20,18)   (4) (8, 6)

PART- II

Note : Answer any FIVE questions. Q. no 14 is compulsory.   **5×2=10**

8. The angles of a quadrilateral are in the ratio 2 : 4 : 5 : 7. Find all the angles.

9. Find the length of a chord which is at a distance of $2\sqrt{11}cm$ from the centre of a circle of radius 12cm.

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10. The diameter of the circle is 52cm and the length of one its chord is 20cm. Find the distance of the chord from the centre.

11. Find the distance between the points (-4, 3), (2, -3).

12. The centre of a circle is (-4, 2). If one end of the diameter of the circle is (-3, 7) then find the other end.

13. Find the centroid of the triangle whose vertices are (2,-4), (-3,-7) and (7,2).

14. Let X be the mid-point of the line segment joining A(3, 0) and (-5, 4) and Y be the mid-point of the line segment joining P(-11, -8) and Q(8, -2). Find the mid-point of the line segment XY.

PART - III

Note : Answer any FIVE questions. Q. No 21 is compulsory.   5×5 = 25

15. Show that the bisectors of angles of a parallelogram form a rectangle.

16. Two circles of radii 5cm and 3 cm intersect at two points and the distance between their centre is 4 cm. Find the length of the common chord.

17. Show that the following points A(3,1), B(6,4) and C(8,6) lies on a straight line.

18. Let A(2 ,3) and B(2, -4) be two points. P lies on the x axis, such that $AP = \frac{3}{7} AB$, Find the coordinates of P.

19. Find the of trisection of the segment joining (-2,-1) and (4,8)

20. Find the coordinates of the point which divides the line segment joining the points A(4, -3) and B(9, 7) in the ratio 3:2

21. The length of the diagonals of a Rhombus are 12cm and 16 cm. Find the side of the rhombus.

PART - IV

Note : Answer the following question.   1×8 = 8

22. (a) Draw the graph for y = 3x - 1

        (or)

    (b) Use graphical method to solve the following system of equations.

    3x+2y=4; 9x+6y-12=0   *TTK-9-MAT EM-2*