UNIT TEST – 5

STD : X   **TIME : 1 ½ Hrs**

SUBJECT : MATHS   **MARKS   : 50**

COORDINATE GEOMETRY

<u>**SECTION – I**</u>   **10 x 1 =10**

<u>**NOTE:**</u> (i) Answer all the 10 questions

   (ii) Choose the correct answer from the given four alternatives and write the

   option code and the corresponding answer

1. If (1,2), (4,6), (x,6), (3,2) are the vertices of a parallelogram taken in order then the value of x is _____
   a) 6   b) 2   c) 1   d) 3

2. The angle of inclination of a st. line parallel to x-axis is equal to _____
   a) 0°   b) 60°   c) 45°   d) 90°

3. The value of k if the st.lines $3x + 6y + 7 = 0$ and $2x + ky = 5$ are perpendicular is
   a) 1   b) -1   c) 2   d) 1/2

4. If the st.lines $ax – y +k = 0$ and $2x + by + c = 0$ are parallel then the values of a and b are _____
   a) A = -1; b = 2   b) a = 1; b = -2   c) a = -1; b = -2   d) b) a = 2; b = -1

5. The Centre of a circle is (-6, 4). If one end of the diameter of the circle is at (-12,8), then the other end is at _____
   a) (-18,12)   b) (-9, 6)   c) (-3,2)   d) (0,0)

6. If the points (2,5), (4,6) and (a,a) are collinear then the value of a is _____
   a) -8   b) 4   c) -4   d) 8

7. The equation of st.line parallel to y – axis and passing through the point(-2,5) is __
   a) x – 2 = 0   b) x + 2 = 0   c) y + 5 = 0   d) y-5 = 0

8. The point p which divides the line segment joining the points A(1,-3) and B(-3,9) internally in the ratio 1 : 3 is _____
   a) (2,1)   b) (0,0)   c) $(\frac{5}{3}, 2)$ d) (1,-2)

9. Slope of the line $7y-2x = 11$ is __
   a) $-\frac{7}{2}$ b) $\frac{7}{2}$ c) $\frac{2}{7}$ d) $-\frac{2}{7}$

10. The centroid of the triangle with vertices at (-2,-5), (-2,12) and (10,-1) is _____

a) (6,6)   b) (4,4)   c) (3,3)   d) (2,2)

SECTION – II   **5 x 2 =10**

NOTE: (i) Answer 5 questions

(ii) Question number 17 is compulsory. Select any 4 questions from the first 6 questions

11. In what ratio does the point P (–2,3) divide the line segment joining the points A(–3,5) and B(4,–9) internally?

12. Find the x and y intercepts of the straight line 3x+10y+ 4 = 0.

13. If the centroid of a triangle is at (3,3) and two of its vertices are A(1,4) and B(5,3). Then Find the third vertex of the triangle.

14. If the x-intercept and y-intercept of a straight line are $\frac{2}{3}$ and $\frac{-1}{2}$ respectively, then find the equation of the straight line.

15. If the st.line passing through the points (h,3) and (4,1) intersects the line 7x – 9y-19 = 0 at right angle, then find the value of h.

16. Find the equation of the straight line passing through the points (-1,1) and (2,- 4).

17. If the area of the ΔABC is 68 sq.units and the vertices are A(6,7), B(–4,1) and C(a,–9) taken in order, then the value of a.

(OR)

Find the equation of the straight line parallel to 3x–y+7 = 0 and passing through (1,–2).

SECTION – III   **6 x 5 =30**

NOTE: (i) Answer 6 questions

(ii) Question number 25 is compulsory. Select any 5 questions from the first 7 questions

PART – C

18. Find the area of the Quadrilateral formed by the points (–4, 5), (0, 7), (5, –5) and (–4, –2)

19. If the vertices of a ΔABC are A(2, –4), B(3, 3) and C(–1, 5). Find the equation of the straight line along the altitude from the vertex B.

20. The Vertices of ΔABC are A(2,1) , B(–2, 3) and C(4, 5). Find the equation of the median through the vertex A.

21. Find the equation of the perpendicular bisector of the straight line segment joining the points (3, 4) and (–1, 2).

22. Find the points of Trisection of the line segment joining the points A(2,-2) and B(-7,4).

23. Find the equation of the straight line segment whose end points are the point of intersection of the straight lines $2x – 3y + 4 = 0$, $x – 2y + 3 = 0$ and the midpoint of the line joining the points (3, –2) and (–5, 8).

24. Find the equation of the straight lines each passing through the point (6,-2) and whose sum of the intercepts is 5.

25. Using the concept of slope, show that the vertices (1 , 2), (–2 , 2), (–4 , –3) and (–1, –3) taken in order form a parallelogram.

(OR)

Find the area of triangle whose equation of three sides of the triangle is given by $x + y = 2$; $x – y = 0$ and $x + 2y – 6 = 0$.