

Class : X

Unit Test-5

Time : 1:30 hrs.

Subject : Mathematics

Marks : 50.

Part-A. $6 \times 1 = 6$ I Answer All the Questions:-

- The area of triangle formed by the points $(-5,0)$, $(0,-5)$ and $(5,0)$ is
 a) 0 sq.units b) 25 sq.units c) 5 sq.units d) None of these.
- The slope of the line joining $(2,3)$, $(4,a)$ is $\frac{1}{8}$. The value of 'a' is
 a) 1 b) 4 c) -5 d) 2.
- $(2,1)$ is the point of intersection of two lines
 a) $x-y-3=0$; $3x-y-7=0$ b) $x+y=3$; $3x+y=7$.
 c) $3x+y=3$; $x+y=7$ d) $x+3y-3=0$; $x-y-7=0$.
- If slope of the line PQ is $\frac{1}{\sqrt{3}}$ then slope of the perpendicular bisector of PQ is
 a) $\sqrt{3}$ b) $-\sqrt{3}$ c) $\frac{1}{\sqrt{3}}$ d) 0.
- If $(5,7)$, $(3,p)$ and $(6,b)$ are collinear, then the value of 'p' is
 a) 3 b) 6 c) 9 d) 12.
- The perimeter of a triangle formed by the points $(0,0)$, $(1,0)$ & $(0,1)$ is
 a) $\sqrt{2}$ b) 2 c) $2+\sqrt{2}$ d) $2-\sqrt{2}$.

Part-B. $4 \times 2 = 8$ II Answer Any Four Questions:-

- Find the slope of a line joining the points $(5, \sqrt{5})$ with the origin.
- The line through the points $(-2, a)$ and $(9, 3)$ has slope $-\frac{1}{2}$. Find the value of a.
- Find the equation of a line whose intercepts on the x and y axis are -5 and $\frac{3}{4}$.
- Show that the straight lines $x-2y+3=0$ and $6x+3y+8=0$ are perpendicular.
- Show that the given points are collinear : $(-3, -4)$, $(7, 2)$ and $(12, 5)$.

Part - C.

$$4 \times 5 = 20$$

III Answer Any Four Questions:-

12. Find the area of the quadrilateral formed by the points $(9, 6)$, $(5, 11)$, $(-5, 12)$ and $(-4, 3)$.
13. A line makes positive intercepts on co-ordinate axes whose sum is 7 and it passes through $(-3, 8)$. Find its equation.
14. Find the value of k if the area of a quadrilateral is 28 sq. units. whose vertices are taken in the order $(-4, -2)$, $(-3, k)$, $(3, -2)$ and $(2, 3)$.
15. Show that given points form a right angled triangle using slope concept. whose vertices are $(1, -4)$, $(2, -3)$ and $(4, -7)$.
16. Find the equation of a straight line joining the point of intersection of $3x + y + 2 = 0$ and $x - 2y - 4 = 0$ to the point of intersection of $7x - 3y = -12$ and $2y = x + 3$.

Part - D.

$$2 \times 8 = 16$$

IV Answer All the Questions:-

17. a) Construct a triangle similar to a given triangle PQR with its sides equal to $\frac{7}{3}$ of the corresponding sides of the triangle PQR (Scale factor $\frac{7}{3} > 1$). (OR)
- b) Construct ΔPQR in which $QR = 5$ cm, $\angle P = 40^\circ$ and the median PG from P to QR is 4.4 cm. Find the length of the altitude from P to QR.
18. a) Graph the following linear function $y = \frac{1}{2}x$. Identify the constant of variation or verify it with the graph. Also.
i) find y when $x = 9$. ii) find x when $y = 7.5$. (OR)
- b) Draw the graph of $xy = 24$, $x, y > 0$. Using the graph, find i) y when $x = 3$ and ii) x when $y = 6$.

... All the Best ...