SHIKSHA CLASSES

Subject : Maths - I | **Question Paper** | **Total Marks :25**

Class : XI | **5 : Straight Line** | **Time : 1 Hour**

SECTION - A

Q1 : Choose the correct option : 4

i) The angle between the line $\sqrt{3}x - y - 2 = 0$ and $x - \sqrt{3}y + 1 = 0$ is

a) 15° b) 30°

c) 45° d) 60°

ii) If the line $kx + 4y = 6$ passes through the point of intersection of the two lines $2x + 3y = 4$ and $3x + 4y = 5$, then k =

a) 1 b) 2

c) 3 d) 4

Q.2 : Solve the following questions: 2

i) Find the slope of the line which passes through the points A (2, 4) and B(5, 7).

ii) If the origin is shifted to the point O'(3, 2) the directions of the axes remaining the same, find the new co-ordinates of the points A (4, 6)

SECTION B

: Solve the following : (ANY 3) 6

Q.3 : A (2, 4) and B (5, 8), find the equation of the locus of point P such that $PA^2 - PB^2 = 13$.

Q.4 : Without using Pythagoras theorem, show that points A (4, 4), B (3, 5) and C (–1, –1) are the vertices of a right-angled triangle.

Q.5 : Find the equation of a line containing the point A (3, 4) and making equal intercepts on the co-ordinate axes.

Q.6 : Find the co-ordinates of the foot of the perpendicular drawn from the point A (–2, 3) to the line $3x - y - 1 = 0$

Q.7 : P (a, b) is the mid point of a line segment intercepted between the axes. Show that the equation of the line is $\frac{x}{a} + \frac{y}{b} = 2$.

SECTION C

: Solve the following : (ANY 3) 9

Q.8 : Find the acute angle between the X-axis and the line joining the points A (3, –1) and B (4, –2)

Q.9 : Find the co-ordinates of the orthocentre of the triangle whose vertices are A (2, –2), B (1, 1) and C (–1, 0)

Q.10 : Show that the lines $3x - 4y + 5 = 0$, $7x - 8y + 5 = 0$ and $4x + 5y - 45 = 0$ are concurrent. Find their point of concurrence.

Q.11 : If A (4, 3), B (0, 0) and C (2, 3) are vertices of ΔABC, then find the equation of bisector of angle BAC

Q.12 : Two lines passing through M (2, 3) intersect each other at an angle of 45^0. If slope of one line is 2, find the equation of the other line.

SECTION D

Answer the following : (ANY 1) 4

Q.13 : O (0, 0), A (6, 0) and B (0, 8) are vertices of a triangle. Find the co-ordinates of the incentre of ΔOAB.

Q.14 : Find the equations of perpendicular bisectors of sides of the triangle whose vertices are P (–1, 8), Q (4, –2) and R (–5, 3)

* * *