

Topics : Circle, Straight Lines, Pair of Straight Lines

Type of Questions

M.M., Min.

Single choice Objective (no negative marking) Q.1,2	(3 marks, 3 min.)	[6, 6]
Multiple choice objective (no negative marking) Q.3,4	(5 marks, 4 min.)	[10, 8]
Subjective Questions (no negative marking) Q.5,6	(4 marks, 5 min.)	[8, 10]
Match the Following (no negative marking) Q.7	(8 marks, 8 min.)	[8, 8]

- A variable line cuts the lines $x^2 - (a + b)x + ab = 0$ in such a way that intercept between the lines subtends a right angle at origin. The locus of the foot of the perpendicular from origin on the variable line is:

(A) $x^2 + y^2 - (a + b)x + ab = 0$ (B) $x^2 + y^2 + (a + b)x - ab = 0$
 (C) $x^2 + y^2 + (a + b)x + ab = 0$ (D) $x^2 + y^2 - (a + b)x - ab = 0$
- If the equation $2x^2 + 3xy + by^2 - 11x + 13y + c = 0$ represents two perpendicular straight lines, then

(A) $b = -2$ (B) $b = 2$ (C) $c = 2$ (D) $c = -2$
- Point(s) on the line $x = 3$ from which the tangents drawn to the circle $x^2 + y^2 = 8$ are at right angles is/are

(A) $(3, -\sqrt{7})$ (B) $(3, \sqrt{23})$ (C) $(3, \sqrt{7})$ (D) $(3, -\sqrt{23})$
- The possible radius of a circle whose centre is at origin and which touches the circle $x^2 + y^2 - 6x - 8y + 21 = 0$, is

(A) 2 (B) 3 (C) 5 (D) 7
- The centre of a square is at the origin and one vertex is $A(2, 1)$. Find the co-ordinates of other vertices of the square.
- Plot the straight lines on the co-ordinate axes.

(i) $y = x$ (ii) $y = -x$ (iii) $y = x + 1$
- | | |
|---|------------------|
| Column - I | Column-II |
| (A) If the distance between the lines $(x + 7y)^2 + \sqrt{2}(x + 7y) - 42 = 0$ is r , then $(5r^2 - 10)$ equals to | (p) 1 |
| (B) If the sum of the distance of a point from two perpendicular lines in a plane is 1, then its locus is $ x + y = k$, where k is equal to | (q) 3 |
| (C) If $6x + 6y + m = 0$ is acute angle bisector of lines $x + 2y + 4 = 0$ & $4x + 2y - 1 = 0$, then m is equal to | (r) 2 |
| (D) Area of the triangle formed by the lines $y^2 - 9xy + 18x^2 = 0$ and $y = 6$ is | (s) 7 |

Answers Key

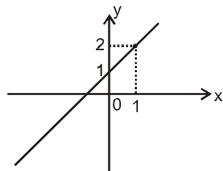
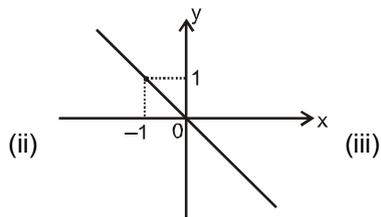
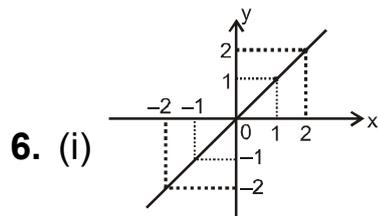
1. A

2. A

3. AC

4. BD

5. $(-2, -1)$, $(-1, 2)$, $(1, -2)$



7. (A) \rightarrow (s), (B) \rightarrow (p), (C) \rightarrow (s), (D) \rightarrow (q)