

Topic : Straight Lines

Type of Questions		M.M., Min.
Comprehension (no negative marking) Q.1 to Q.3	(3 marks, 3 min.)	[9, 9]
Single choice Objective (no negative marking) Q.4,5,6	(3 marks, 3 min.)	[9, 9]
Multiple choice objective (no negative marking) Q.7	(5 marks, 4 min.)	[5, 4]

COMPREHENSION (Q.No. 1 to 3)

Consider the family of lines passing through the point of intersection of lines

$$L_1 : 3x + 4y + 7 = 0$$

$$L_2 : 4x - 3y + 1 = 0$$

- A member of family which bisects the angle between them and is closer to origin, is
 (A) $x - 7y - 6 = 0$ (B) $7x + y + 8 = 0$ (C) $7x - y + 6 = 0$ (D) $7x + y + 4 = 0$
- A member of family with gradient -2 has y-intercept equal to
 (A) 2 (B) -3 (C) 1 (D) -2
- A member of this family whose slope is not defined is
 (A) $y + 1 = 0$ (B) $x = 1$ (C) $3x = 4$ (D) $x + 1 = 0$
- Chords of the curve $4x^2 + y^2 - x + 4y = 0$ which subtend a right angle at the origin pass through a fixed point whose co-ordinates are :
 (A) $\left(\frac{1}{5}, -\frac{4}{5}\right)$ (B) $\left(-\frac{1}{5}, \frac{4}{5}\right)$ (C) $\left(\frac{1}{5}, \frac{4}{5}\right)$ (D) $\left(-\frac{1}{5}, -\frac{4}{5}\right)$
- The image of the pair of lines represented by $ax^2 + 2hxy + by^2 = 0$ by the line mirror $y = 0$ is :
 (A) $ax^2 - 2hxy - by^2 = 0$ (B) $bx^2 - 2hxy + ay^2 = 0$
 (C) $bx^2 + 2hxy + ay^2 = 0$ (D) $ax^2 - 2hxy + by^2 = 0$
- The value of k so that the equation $12x^2 - 10xy + 2y^2 + 11x - 5y + k = 0$ represents a pair of lines is
 (A) -2 (B) 2 (C) 7 (D) -7
- The sides AB, BC and CA of a triangle ABC are given by the equation $3x + 4y - 6 = 0$, $12x - 5y - 3 = 0$ and $x + y + 2 = 0$ respectively. Find the equation of bisector of internal angle B.

Answers Key

1. (A) 2. (B) 3. (D) 4. (A) 5. (D) 6. (B)

7. $3x - 11y + 9 = 0$