MATHEMATICS

DPP

DAILY PRACTICE PROBLEMS

DPP No. 48

Total Marks : 22

Max. Time : 20 min.

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

1. 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) $7x + y + 4 = 0$

2. A member of family with gradient -2 has y-intercept equal to

(A) 2 (B) -3 (C) 1 (D) -2

3. A member of this family whose slope is not defined is

(A) $y + 1 = 0$ (B) $x = 1$ (C) $3x = 4$ (D) $x + 1 = 0$

4. 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) $\left(-\frac{1}{5}, -\frac{4}{5}\right)$

5. The image of the pair of lines represented by $ax^2 + 2h\,xy + by^2 = 0$ by the line mirror $y = 0$ is :

(A) $ax^2 - 2h\,xy - by^2 = 0$ (B) $bx^2 - 2h\,xy + ay^2 = 0$

(C) $bx^2 + 2h\,xy + ay^2 = 0$ (D) $ax^2 - 2h\,xy + by^2 = 0$

6. 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

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