

Straight Lines and Pair of Straight Lines

EE24BTECH11041 - Mohit

I. A -FILL IN THE BLANKS

- The area enclosed within the curve $|x| + |y| = 1$ is ... (1981-2 Marks)
- $y = 10^x$ is the reflection of $y = \log x$ in the line whose equation is ... (1982-2 Marks)
- The set of lines $ax + by + c = 0$, where $3a + 2b + 4c = 0$ concurrent at the point ... (1982-2 Marks)
- Given the points **A**(0,4) and **B**(0,-4), the equation of the locus of the point **P**(x,y), such that $|AP - BP| = 6$ is ... (1983-1 Marks)
- If a, b and c are in A.P, then the straight line $ax + by + c = 0$ will always pass through a fixed point whose coordinate are ... (1984-2 Marks)
- The orthocentre of the triangle formed by the lines $x + y = 1$, $2x + 3y = 6$ and $4x - y + 4 = 0$ lies in the quadrant number ... (1985-2 Marks)
- Let the algebraic sum of the perpendicular distances from the points (2,0), (0,2) and (1,1) to a variable straight line be zero; then the line passes through a fixed point whose coordinates are ... (1991-2 Marks)
- the vertices of a triangle are **A**(-1, -7), **B**(5, 1) and **C**(1, 10). The equation of the bisector of the angle $\angle ABC$ is ... (1993-2 marks)
- Vertices of a rectangle
- None of these
- The points of the (4, 1) undergoes the following three transformations successively. (1980)
 - Reflection about the line $y = x$.
 - Translation through a distances of x-axis.
 - Rotation through an $\frac{\pi}{4}$ about the origin in the counter clockwise direction.
 Then the final position of the point is given by the coordinates.
 - $(\frac{1}{\sqrt{2}}, \frac{7}{\sqrt{2}})$
 - $(-\sqrt{2}, 7\sqrt{2})$
 - $(-\frac{1}{\sqrt{2}}, \frac{7}{\sqrt{2}})$
 - $(\sqrt{2}, 7\sqrt{2})$
- The straight lines $x + y = 0$, $3x + y - 4 = 0$, $x + 3y - 4 = 0$ form a triangle which is (1983-1 Marks)
 - isosceles
 - equilateral
 - right angled
 - none of these
- If $p = (1, 0)$, $Q = (-1, 0)$ and $R = (2, 0)$ are three given points, then locus of the points S satisfying the relation $SQ^2 + SR^2 = 2SP^2$ is (1988-2 Marks)
 - a straight lines parallel to x-axis
 - a circle passing through the origin
 - a circle with the centre at the origin
 - a straight line parallel to y-axis

II. B-TRUE/FALSE

- The straight line $5x + 4y = 0$ passes through the point of intersection of the straight lines $x + 2y - 10 = 0$ and $2x + y + 5 = 0$. (1983-1 Marks)
- The lines $2x + 3y + 19 = 0$ and $9x + 6y - 17 = 0$ cut the coordinates axes in concyclic points. (1988-1 Marks)
- Line L has intercepts a and b on the coordinate axes. When the axes are rotated through a given angle, keeping the origin fixed, the same line L has intercept p and q , then (1990-2 Marks)
 - $a^2 + b^2 = p^2 + q^2$
 - $\frac{1}{a^2} + \frac{1}{b^2} = \frac{1}{p^2} + \frac{1}{q^2}$
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III. C-MCQs WITH ONE CORRECT ANSWER

- The points $(-a, -b)$, $(0, 0)$, (a, b) and (a^2, ab) are: (1979)
 - collinear
 - Vertices of a parallelogram