UNIT - 5

2 Marks

1. Write the angle between the pair of straight lines
2. Find the eq of the st. line passing (-1, 2) and having slope $\frac{2}{7}$.
3. Find the slope of the line $2x - 3y + 7 = 0$
4. Write down the eq of the st. line passing through the points (x_1, y_1) and (x_2, y_2).
5. Find the eq. of the st. line passing through intercepts on the axes.
6. Give the condition for the two lines to be parallel.
7. Write the condition for the general eq. of the second degree $ax^2 + 2hxy + by^2 + 2gx + 2fy + c = 0$ to represent a pair of st. lines.
8. Find the eq. of the st. line through the point $(7, -3)$ and cutting off equal intercepts on the axes.
9. Show that the points $(1,1)$, $(5, -9)$, $(-1, 6)$ are collinear.
10. Write down the general eq of pair of st. lines.

5 marks

11. ST the Pts $(6,6)$, $(2,3)$ and $(4,7)$ are the vertices of the Right angle triangle.
12. Find the centroid of the triangle formed by the lines $x^2 - 4xy + 3y^2 = 0$ and the line $y - 3 = 0$.
13. Find (x, y), if $(3,2)$, $(6,3)$, (x, y) and $(6,5)$ are the vertices of the Parallelogram.
14. Find the values of λ, if $x^2 - \lambda xy + 2y^2 + 3x - 5y + 2 = 0$ represents a pair of st. lines.
15. The vertices of the triangle are $A(3,5)$, $B(-7, 9)$, $C(1, 3)$. Find the length of the 3 medians of the triangle.
16. ST the Pts $(4,3)$ $(7, -1)$ and $(9, 3)$ are the vertices of the isosceles triangle.
17. ST $x^2 - y^2 + x - 3y - 2 = 0$ represents a pair of st. line and also find the angle between them.
18. Find the angle between $y = \sqrt{3}x + 4$ and $y = \frac{1}{\sqrt{3}}x + 2$.
19. If slope of one of the lines of $ax^2 + 2hxy + by^2 = 0$ is twice that of the other, Show that $8h^2 = 9ab$.
20. Find the eq of the line which passes through the point of intersection of the lines $5x - 6y = 1$ and $3x + 2y + 5 = 0$ and is perpendicular to the line $3x - 5y + 11 = 0$.
21. Find the eq of the line which passes through the point of intersection of the lines $2x + y = 8$ and $3x - 2y + 7 = 0$ and is parallel to the line $4x + y - 11 = 0$.
22. Find the eq of the st. line passing through the intersection of the st. lines $2x + y = 8$ and $3x - y = 2$ and through the pt. $(2, -3)$
23. Find the value of k, so that $2x^2 + 5xy + 2y^2 + 15x + 18y + k = 0$ may represent a pair of st. line

10 marks

24. ST the eq $4x^2 + 4xy + y^2 - 6x - 3y - 4 = 0$ represents a pair of st. line and find the distance between them.
25. ST the four lines by $12x^2 + 7xy - 12y^2 = 0$ and $12x^2 + 7xy - 12y^2 - x + 7y - 1 = 0$ form the sides of a square
26. ST the eq. $4x^2 + 4xy + y^2 - 6x - 3y - 4 = 0$ represents a pair of parallel lines and find the distance between them.
27. ST the line $lx + my + n = 0$ and the lines $(lx + my)^2 - 3(mx - ly)^2 = 0$ form the sides of an equilateral triangle.
28. Find the coordinates of the circum centre of a triangle whose vertices are $A(3, -2)$, $B(4,3)$ and $C(-6,5)$.