DPP
DAILY PRACTICE PROBLEMS

Class : XIth **Subject : MATHS**
Date : **DPP No. : 3**

Topic :- STRAIGHT LINES

1. A straight line through $P(1,2)$ is such that its intercept between the axes is bisected at P. Its equation is
   a) $x + 2y = 5$ b) $x - y + 1 = 0$ c) $x + y - 3 = 0$ d) $2x + y - 4 = 0$
2. The incentre of the triangle formed by the lines $x = 0, y = 0$ and $3x\ 4y = 12$ is at
   a) $(1/2,1/2)$ b) $(1,1)$ c) $(1,1/2)$ d) $(1/2,1)$
3. A pair of perpendicular straight lines passes through the origin and also through the point of intersection of the curve $x^2 + y^2 = 4$ with $x + y = a$. The set containing the value of 'a' is
   a) $\{-2,2\}$ b) $\{-3,3\}$ c) $\{-4,4\}$ d) $\{-5,5\}$
4. If pairs straight lines $x^2 - 2pxy - y^2 = 0$ and $x^2 - 2qxy - y^2 = 0$ be such that each pair bisects the angle between the other pair, then
   a) $pq = 1$ b) $pq = -1$ c) $pq = 2$ d) $pq = -2$
5. In a rhombus $ABCD$ the diagonals AC and BD intersect at the point $(3,4)$. If the point A is $(1,2)$ the diagonal BD has the equation
   a) $x - y - 1 = 0$ b) $x + y - 1 = 0$ c) $x - y + 1 = 0$ d) $x + y - 7 = 0$
6. The gradient of one of the lines of $ax^2 + 2hxy + by^2 = 0$ is twice that of the other, then
   a) $h^2 = ab$ b) $h = a + b$ c) $8h^2 = 9ab$ d) $9h^2 = 8ab$
7. The family of lines making an angle $30°$ with the line $\sqrt{3}y = x + 1$ is
   a) $x = \lambda$(λ is parameter) b) $y = -\sqrt{3}x + \lambda$(λ is parameter)
   c) $y = \sqrt{3}x + \lambda$ d) None of the above
8. If the slope of one of the lines represented by $ax^2 + 2hxy + by^2 = 0$ be the square of the other, then $\frac{a+h}{h} + \frac{8h^2}{ab}$ is
   a) 3 b) 4 c) 5 d) 6
9. The equation $y^2 - x^2 + 2x - 1 = 0$, represents
   a) A pair of st. lines b) A circle c) A parabola d) An ellipse
10. The vertices of a $\Delta\ OBC$ are $(0,0), B(-3,-1)$ and $C(-1,-3)$. The equation of a line parallel to BC and intersecting sides OB and OC whose distance from the origin is $1/2$, is
    a) $x + y + \frac{1}{2} = 0$ b) $x + y - \frac{1}{2} = 0$ c) $x + y - \frac{1}{\sqrt{2}} = 0$ d) $x + y + \frac{1}{\sqrt{2}} = 0$
11. The angle between the line joining the points $(1,-2), (3,2)$ and the line $x + 2y - 7 = 0$ is
    a) π b) $\pi/2$ c) $\pi/3$ d) $\pi/6$
12. The equation $y^2 - x^2 + 2x - 1 = 0$ represents
    a) A hyperbola b) An ellipse
    c) A pair of straight lines d) A rectangular hyperbola
13. The equation to the bisecting the join of $(3,-4)$ and $(5,2)$ and having its intercepts on the x-axis and the y-axis in the ratio $2:1$ is
    a) $x + y - 3 = 0$ b) $2x - y = 9$ c) $x + 2y = 2$ d) $2x + y = 7$
14. $A(-5,0)$ and $B(3,0)$ are two of the vertices of a triangle ABC. Its area is 20 square cms. The vertex C lies on the line $x - y = 2$. The coordinates of C are
    a) $(-7,-5)$ or $(3,5)$ b) $(-3,-5)$ or $(-5,7)$ c) $(7,5)$ or $(3,5)$ d) $(-3,-5)$ or $(7,5)$
15. The point of concurrence of the lines $ax + by + c = 0$ and a, b, c satisfy the relation $3a + 2b + 4c = 0$ is

a) $\left(\frac{3}{2},\frac{1}{4}\right)$ b) $\left(\frac{3}{4},\frac{1}{4}\right)$ c) $\left(\frac{3}{4},\frac{1}{2}\right)$ d) $\left(\frac{3}{2},\frac{1}{2}\right)$

16. The angle between the straight line $x-y\sqrt{3}=5$ and $\sqrt{3}x+y=7$ is
a) $90°$ b) $60°$ c) $75°$ d) $30°$

17. The equation $y=\pm\sqrt{3}x, y=1$ are the sides of
a) An equilateral triangle b) A right angled triangle
c) An isosceles triangle d) An obtuse triangle

18. A line passes through the point of intersection of the lines $3x+y+1=0$ and $2x-y+3=0$ and makes equal intercepts with axes. Then, equation of the line is
a) $5x+5y-3=0$ b) $x+5y-3=0$ c) $5x-y-3=0$ d) $5x+5y+3=0$

19. The equation of the straight line which passes through the point $(1,-2)$ and cuts off equal intercepts from the axes will be
a) $x+y=1$ b) $x-y=1$ c) $x+y+1=0$ d) $x-y-2=0$

20. The orthocenter of a triangle formed by the lines $x+y=1, 2x+3y=6$ and $4x-y+4=0$ lies in the
a) Ist quadrant b) IInd quadrant c) IIIrd quadrant d) IVth quadrant