Straight Lines

Subjects : Maths **Practice Questions and Pyqs**

Maths - Section A (MCQ)

1. The equation of the line passing through the point of intersection of the lines $x + 2y + 6 = 0$ and $2x - y = 2$ and making an intercept 5 on the y-axis is

   A) $39x + 2y - 10 = 0$ B) $39x - 2y + 10 = 0$

   C) $x + 4y - 20 = 0$ D) $x - 4y + 20 = 0$

2. The equation of the straight line passing through the point $(-5, 3)$ such that the portion of the line intercepted between the axes is divided by the point in the ratio $4 : 3$ (from the X-axis to the Y-axis) is...

   A) $9x + 20y + 105 = 0$ B) $9x - 20y - 105 = 0$

   C) $9x - 20y + 105 = 0$ D) $9x + 20y - 105 = 0$

3. If a triangle ABC has vertices $A(1, -6), B(2, -3)$ and $C(3, -2)$, then the coordinates of its orthocenter are....

   A) $(-6, 1)$ B) $(6, 1)$ C) $(-2, 3)$ D) $(3, 2)$

4. The coordinates of the orthocenter of the triangle whose sides are represented by the lines $4x - 7y + 10 = 0$, $x + y = 5$ and $7x + 4y = 15$ are ...

   A) $(1, 2)$ B) $(1, -2)$ C) $(-1, 2)$ D) $(-1, -2)$

5. From the following options, the nearest line to the origin is ....

   A) $3x - 4y + 4 = 0$ B) $2x - 3y = 5$ C) $4x - 3y + 12 = 0$ D) $5x - 2y = 3$

6. The distance of the point $(1, 2)$ from the line $x + y = 0$ measured parallel to the line $3x - y = 2$ is

   A) $\frac{3\sqrt{2}}{8}$ units B) $\frac{3\sqrt{10}}{4}$ units C) 10 units D) $5\sqrt{5}$ units

7. The co-ordinates of the foot of perpendicular, drawn from the point $(-2, 3)$ on the line $3x - y - 1 = 0$ are

   A) $(-1, 2)$ B) $(1, -2)$ C) $(-1, -2)$ D) $(1, 2)$

8. The equation of the line passing through the point of intersection of the lines $3x - y = 5$ and $x + 3y = 1$ and making equal intercepts on the axes is

   A) $5x + 5y - 7 = 0$ B) $5x - 5y - 7 = 0$ C) $2x + y - 7 = 0$ D) $x - y + 7 = 0$

9. The distance between the lines $3x + 4y = 9$ and $6x + 8y = 15$ is

   A) 5 units B) 3 units C) 0.3 units D) 0.5 units

10. If the line joining two points $A(2, 0)$ and $B(3, 1)$ is rotated about A in anticlockwise direction through an angle of 15°, then the equation of the line in new position is

    A) $y = 3x - 6$ B) $y = \sqrt{3}x - 2\sqrt{3}$ C) $y = -\sqrt{3}x + 2\sqrt{3}$ D) $y = \frac{1}{\sqrt{3}}x - \frac{2}{\sqrt{3}}$

11. The slopes of the lines, making angle of measures 45° with the line $2x - 3y = 5$ are

A) $5, \frac{-1}{5}$ B) $\frac{-1}{5}, -5$ C) $\frac{1}{5}, -5$ D) $5, \frac{1}{5}$

12. The co-ordinates of the foot of the perpendicular from the point $(1, 2)$ on the line $x - 3y + 7 = 0$ are

A) $\left(\frac{4}{5}, \frac{13}{5}\right)$ B) $(-13, -2)$ C) $\left(\frac{-13}{5}, \frac{-2}{5}\right)$ D) $(2, 3)$

13. If $P(2, 2), Q(-2, 4)$ and $R(3, 4)$ are the vertices of $\triangle PQR$, then the equation of the median through vertex, R is ___

A) $x + 3y + 9 = 0$ B) $x - 3y + 9 = 0$ C) $x - 3y - 9 = 0$ D) $x + 3y - 9 = 0$

14. If the points $A(5, k), B(-3, 1)$ and $C(-7, -2)$ are collinear, then k =

A) 7 B) $\frac{-1}{7}$ C) $\frac{1}{7}$ D) -7

15. The acute angle between the lines given by $y - \sqrt{3}x + 1 = 0$ and $\sqrt{3}y - x + 7 = 0$ is

A) 75° B) 60° C) 45° D) 30°

16. If p is the length of the perpendicular from origin to the whose intercepts on the axes are a and b, then $\frac{1}{a^2} + \frac{1}{b^2} =$

A) p^2 B) $\frac{1}{2p^2}$ C) $2p^2$ D) $\frac{1}{p^2}$

17. The equation of line, where length of the perpendicular segment from origin to the line is 4 and the inclination of this perpendicular segment with the positive direction of X-axis is 30°, is

A) $x + \sqrt{3}y = 8$ B) $x - \sqrt{3}y = 8$ C) $\sqrt{3}x - y = 8$ D) $\sqrt{3}x + y = 8$

18. The equation of perpendicular bisector of the line segment joining $A(-2, 3)$ and $B(6, -5)$ is

A) $x + y = 3$ B) $x + y = 1$ C) $x - y = -1$ D) $x - y = 3$

19. The y-intercept of the line passing through A(6, 1) and perpendicular to the line x- 2y =4 is …

A) 5 B) 13 C) -2 D) 26

20. The equation of a line passing through the point $(7, -4)$ and perpendicular to the line passing through the points $(2, 3)$ and $(1, -2)$ is

A) $x + 5y + 13 = 0$ B) $x - 5y - 13 = 0$ C) $x - 2y - 15 = 0$ D) $x + 2y + 1 = 0$

21. The equation of a line, whose perpendicular distance from the origin is 7 units and the angle, which the perpendicular to the line from the origin makes, is 120° with positive X-axis, is

A) $x + \sqrt{3}y - 14 = 0$ B) $x + \sqrt{3}y + 14 = 0$

C) $x - \sqrt{3}y + 14 = 0$ D) $x - \sqrt{3}y - 14 = 0$

22. The base of an equilateral triangle is represented by the equation $2x - y - 1 = 0$ and its vertex is $(1, 2)$, then the length (in units) of the side of the triangle is

A) $\sqrt{\frac{20}{13}}$ B) $\frac{2}{\sqrt{15}}$ C) $\sqrt{\frac{8}{15}}$ D) $\sqrt{\frac{15}{2}}$

23. The equation of the line perpendicular to $2x - 3y + 5 = 0$ and making an intercept 3 with positive Y-axis is

A) $3x + 2y - 6 = 0$ B) $3x + 2y + 6 = 0$ C) $3x + 2y - 7 = 0$ D) $3x + 2y - 12 = 0$

24. The straight line, $2x - 3y + 17 = 0$ is perpendicular to the line passing through the points $(7, 17)$ and $(15, \beta)$, then β equals

A) 5 B) $\frac{35}{3}$ C) $-\frac{35}{3}$ D) -5

25. If the slope of one of the lines given by $Kx^2 + 6xy + y^2 = 0$ is three times the order, then the value of K is

A) $\frac{9}{4}$ B) $\frac{4}{9}$ C) $\frac{27}{4}$ D) $\frac{4}{27}$

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1 - B	2 - C	3 - A	4 - A	5 - D	6 - B	7 - D	8 - A	9 - C	10 - B
11 - A	12 - A	13 - B	14 - A	15 - D	16 - D	17 - D	18 - D	19 - B	20 - A
21 - C	22 - B	23 - A	24 - A	25 - C					