WORKSHEET-13
SUBJECT – MATHEMATICS
1st - Term

Chapter: Co-ordinate Geometry   **Class: XI**

Topic: Straight Lines 2   **Date: 10.08.2020**

Choose the correct option   (1 x 15=15)

1 If the point (5, 2) bisects the intercept of a line between the axes, then its equation is
(a) $5x + 2y = 20$ (b) $2x + 5y = 20$ (c) $5x - 2y = 20$ (d) $2x - 5y = 20$

2 $A(6, 3)$, $B(-3, 5)$, $C(4, -2)$ and $D(x, 3x)$ are four points. If $\Delta DBC : \Delta ABC = 1:2$, then x is equal to
(a) 11/8   (b) 8/11   (c) 3   (d) none of these

3 If p be the length of the perpendicular from the origin on the line $x/a + y/b = 1$, then
(a) $p^2 = a^2 + b^2$ (b) $p^2 = \dfrac{1}{a^2} + \dfrac{1}{b^2}$ (c) $\dfrac{1}{p^2} = \dfrac{1}{a^2} + \dfrac{1}{b^2}$ (d) none of these

4 The equation of the line passing through (1, 5) and perpendicular to the line $3x - 5y + 7 = 0$ is
(a) $5x + 3y - 20 = 0$ (b) $3x - 5y + 7 = 0$ (c) $3x - 5y + 6 = 0$ (d) $5x + 3y + 7 = 0$

5 The figure formed by the lines $ax \pm by \pm c = 0$ is
(a) a rectangle   (b) a square   (c) a rhombus   (d) none of these

6. A line passes through the point (2, 2) and is perpendicular to the line $3x + y = 3$. Its y-intercept is
(a) 1/3   (b) 2/3   (c) 1   (d) 4/3

7. If the lines $ax + 12y + 1 = 0, bx + 13y + 1 = 0$ and $cx + 14y + 1 = 0$ are concurrent, then a, b, c are in
(a) H.P.   (b) G.P.   (c) A.P.   (d) none of these

8. The number of real values of λ for which the lines $x - 2y + 3 = 0$, $\lambda x + 3y + 1 = 0$ and $4x - \lambda y + 2 = 0$ are concurrent is
(a) 0   (b) 1   (c) 2   (d) Infinite

9. The equations of the sides AB, BC and CA of ΔABC are $y - x = 2$, $x + 2y = 1$ and $3x + y + 5 = 0$ respectively. The equation of the altitude through B is
(a) $x - 3y + 1 = 0$ (b) $x - 3y + 4 = 0$ (c) $3x - y + 2 = 0$ (d) none of these

10. If p_1 and p_2 are the lengths of the perpendiculars from the origin upon the lines $x \sec \theta + y \csc \theta = a$ and $x \cos \theta - y \sin \theta = a \cos 2\theta$ respectively, then
(a) $4p_1^2 + p_2^2 = a^2$ (b) $p_1^2 + 4p_2^2 = a^2$ (c) $p_1^2 + p_2^2 = a^2$ (d) none of these

11. Area of the triangle formed by the points $((a + 3)(a + 4), a + 3)$, $((a + 2)(a + 3), (a + 2))$ and $((a + 1)(a + 2), (a + 1))$ is
(a) $25a^2$ (b) $5a^2$ (c) $24a^2$ (d) none of these

12. If $a + b + c = 0$, then the family of lines $3ax + by + 2c = 0$ pass through fixed point
    (a) $(2, 2/3)$ (b) $(2/3, 2)$ (c) $(-2, 2/3)$ (d) none of these

13. The line segment joining the points $(-3, -4)$ and $(1, -2)$ is divided by y-axis in the ratio
    (a) $1 : 3$ (b) $2 : 3$ (c) $3 : 1$ (d) $3 : 2$

14. The area of a triangle with vertices at $(-4, -1)$, $(1, 2)$ and $(4, -3)$ is
    (a) 17   (b) 16   (c) 15   (d) none of these

15. The line segment joining the points $(1, 2)$ and $(-2, 1)$ is divided by the line $3x + 4y = 7$ in the ratio
    (a) $3 : 4$ (b) $4 : 3$ (c) $9 : 4$ (d) $4 : 9$