COORDINATE GEOMETRY CM100701

Very Short Answer Type Questions : **1 mark each**

1. The perpendicular distance of A (5, 12) from the y-axis is :

(a) 13 units (b) 5 units (c) 12 units (d) 17 units

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3. S is a point on x-axis at a distance of 4 units from y-axis to its right. The coordinates of S are :

(a) (4, 0) (b) (0, 4) (c) (4, 4) (d) (– 4, 4)

4. The mid-point of the line segment joining the points A(–2, 8) and B(–6, –4) is :

(a) (–6, – 4) (b) (2, 6) (c) (– 4, 2) (d) (4, 2)

5. If the points (k, 2k), (3k, 3k) and (3, 1) are collinear, then k is :

(a) $\frac{1}{3}$ (b) $-\frac{1}{3}$ (c) $\frac{2}{3}$ (d) $-\frac{2}{3}$

Short Answer Type Questions : **2 marks each**

6. A is a point on the x-axis and B is a point on the y-axis. If the abscissa of A be a and the ordinate of B be –a, then find the length of segment AB.

7. Two vertices of a triangle are A(–7, 4) and B(3, – 5). If its centroid is (2, –1), then find the coordinates of the third vertex C.

8. In what ratio does the point P(2, –5) divide the line segment joining A(– 3, 5) and B(4, –9)?

Long Answer Type Questions : **3 marks each**

9. If the line segment joining the points (3a + 1, –3) and B(8a, 5) is divided by the point P(9a – 2, –b) in the ratio 3 : 1, find the valuse of a and b.

10. The mid-point of the line segment joining points A(x, y + 1) and B(x + 1, y + 2) is C. Find the value of x and y if the coordinates of C are $\left(\frac{3}{2}, \frac{5}{2}\right)$.

11. Show that the points P(0, –2), Q(3,1), R(0, 4) and S(–3, 1) are the vertices of a square PQRS.

Very Long Answer Type Questions : **4 marks each**

12. If the points (x, y), (x_1, y_1) and (x – x_1, y – y_1) are collinear, show that $xy_1 = x_1y$. Also, show that the line joining the given points passes through the origin.

13. Mr. Aggarwal starts walking from his home to office. Instead of going to the office directly, he goes to a bank first, from there to his daughter's school and then reaches the office. What is the extra distance travelled by Mr. Aggarwal in reaching his office ? Assume that all distances covered are in straight lines. If

the house is situated at (2, 4), bank at (5, 8), school at (13, 14) and office at (13, 26) and coordinates are in km.