Multiple Choice Questions (1 mark each)

1. The point on X-axis which is equidistant from the points $(2, -2)$ and $(-4, 2)$ is

   (a) $(1, 0)$ (b) $(2, 0)$ (c) $(0, 2)$ (d) $(-1, 0)$

2. The figure formed by the points $A\ (a, a)$, $B\ (-a, -a)$ and $C\ (-\sqrt{3}a, \sqrt{3}a)$ will be

   (a) an isosceles triangle
   (b) an equilateral triangle
   (c) a scalene triangle
   (d) None of the above

3. Find the coordinates of the point which is equidistant from the vertices of a ΔABC, where $A(3, -1)$, $B(-1, -6)$ and $C(4, -1)$.

   (a) $\left(2, \frac{-8}{3}\right)$ (b) $\left(-2, \frac{8}{3}\right)$ (c) $\left(\frac{2}{3}, 8\right)$ (d) $\left(\frac{-2}{3}, 8\right)$

Short Answer Type (I) Questions (2 marks each)

4. Find the coordinates of points on the X-axis which are at a distance of 17 units from the point $(11, -8)$.

5. If A is a point on Y-axis, whose ordinate is 4 and coordinates of point B is $(-3, 1)$, then find the distance AB.

6. If $\left(3, \frac{3}{4}\right)$ is the mid-point of the line segment joining the points $(k, 0)$ and $\left(7, \frac{3}{2}\right)$, then find the value of k.

7. The centre of a circle is $(4a - 2, 6a + 2)$ and is passing through the point $(-6, -2)$. If the diameter of the circle is 40 units, then find the value of a.

8. Find the distance between the points $A(a\sin\theta + b\cos\theta, 0)$ and $B(0, a\cos\theta - b\sin\theta)$.

9. A point A is at a distance of $\sqrt{10}$ units from the point $(4, 3)$. Find the coordinates of point A, if its ordinate is twice its abscissa.

10. Find the ratio in which the line $2x + y - 4 = 0$, divides the line segment joining the points $A(2, -2)$ and $B(3, 7)$.

Short Answer Type (II) Questions (3 marks each)

11. Find a relation between x and y, such that the point (x, y) is equidistant from the points $(3, 6)$ and $(-3, 4)$.

12. Show that the points $(3, 2)$, $(0, 5)$, $(-3, 2)$ and $(0, -1)$ are vertices of square.

13. If (a, b) is the mid-point of the line segment joining the points $A(10, -6)$ and $B(k, 4)$ and $a - 2b = 18$, then find the value of k and the distance AB.

14. Points $P(-5, x)$, $Q(y, 7)$ and $R(1, -3)$ are collinear such that $PQ = QR$. Calculate the values of x and y.

Long Answer Type Questions

(5 marks each)

15. The vertices of a ΔABC are $A(5, 5)$, $B(1, 5)$ and $C(9, 1)$. A line is drawn to intersect sides AB and AC at P and Q, respectively, such that $\frac{AP}{AB} = \frac{AQ}{AC} = \frac{3}{4}$. Find the length of the line segment PQ.

16. A circle passing through the points $(0, 0)$, $(-2, 1)$ and $(-3, 2)$. Find the coordinates of the centre of circle and also find its radius.

Answers

1. (d) **2.** (b) **3.** (a) **4.** (26, 0) and (–4, 0)

For Solution scan QR code

5. $3\sqrt{2}$ units

6. $k = -1$ **7.** 2 **8.** $\sqrt{a^2 + b^2}$ **9.** (3, 6) and (1, 2)

10. 2 : 9 **11.** $3x + y - 5 = 0$ **13.** $k = 22$ and $AB = 2\sqrt{61}$ units

14. $x = 17$ and $y = -2$ **15.** $3\sqrt{5}$ units **16.** $\left(\frac{3}{2}, \frac{11}{2}\right)$ and radius $= \frac{1}{2}\sqrt{130}$ units