RK VISION ACADEMY

NEET | IIT – JEE | FOUNDATION

CBSE PRACTICE PAPER(2024)

(Mathematics)

Grade : X **Marks: 40 marks**

Chapter: COORDINATE GEOMETRY SET-1 **Time: 90 minutes**

SECTION A

(This section comprises of Multiple-choice questions (MCQ) of 1 mark each.)

1. The line segment joining the points P(3, -1) and Q(-6, 5) is trisected. The coordinates of point of trisection are

(a) (3, 3) (b) (-3, 3) (c) (3, -3) (d) (- 3, – 3)

2. C is the mid-point of PQ is P is (4, x), C is (y,-1) and Q is (-2,4), then * and y respectively are

(a) – 6 and 1 (b) -6 and 2 (c) 6 and -1 (d) 6 and 2

3. If P is a point on F-axis, whose ordinate is 3 and Q is a point (-5, 2), then the distance PQ is

(a) √26 units (b) √24 units (c) 5 units (d) √65units

4. The point of intersection of the coordinate axes is

(a) X-axis (b) F-axis (c) origin (d) (1, 2)

5. The centroid of APQR whose vertices are P(-8, 0), Q(5, 5) and R(-3, -2) is

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

6. If P(-2, 2) is the mid-point of the line segment joining A(-5, b) and B(b, 3), then the value of b is

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

7. The point which divides the line segment joining the points (7, –6) and (3, 4) in ratio 1 : 2 internally lies in the

(A) I quadrant (B) II quadrant (C) III quadrant (D) IV quadrant

8. The point which lies on the perpendicular bisector of the line segment joining the points A (–2, –5) and B (2, 5) is

(A) (0, 0) (B) (0, 2) (C) (2, 0) (D) (–2, 0)

9. Assertion (A) The distance of a points P (x, y) from the origin is $\sqrt{x^2-y^2}$.
Reason (R) If P(-1, 1) is the mid-point of the line segment joining A(-3, b) and B(1, b + 4), then value of b is -1.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A)

(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion(A)

(c) Assertion (A) is true but Reason (R) is false.

(d) Assertion (A) is false but Reason (R) is true.

10. Assertion (A): Mid-point of a line segment divides line in the ratio 1:1.
Reason (R): If area of triangle is zero that means points are collinear.

(a) Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of

(b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A)

(c) Assertion (A) is true but Reason (R) is false

(d) Assertion (A) is false but Reason (R) is true

Assertion (A)

SECTION B
(This section comprises of very short answer type-questions (VSA) of 2 marks each)

11 The points (4, 5), (7, 6) and (6, 3) are collinear or not.

12 Point P (0, 2) is the point of intersection of y–axis and perpendicular bisector of line segment joining the points A (–1, 1) and B (3, 3).

13 A circle has its centre at the origin and a point P (5, 0) lies on it. The point Q (6, 8) lies outside the circle.

SECTION C
(This section comprises of short answer type questions (SA) of 3 marks each)

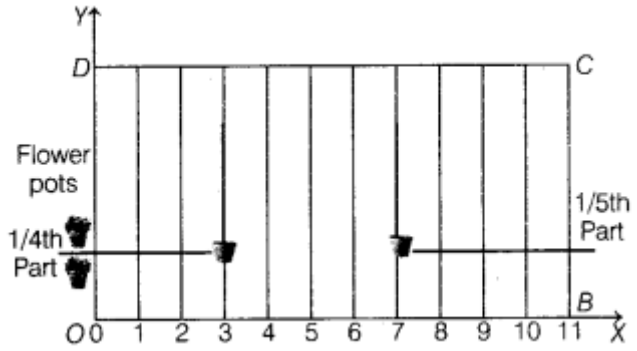
14 Find the area of the triangle ABC with A (1, –4) and the mid-points of sides through A being (2, – 1) and (0, – 1).

15 Find the value of a, if the distance between the points A (–3, –14) and B (a, –5) is 9 units.

16 Find the value of m if the points (5, 1), (–2, –3) and (8, 2m) are collinear.

SECTION D
(This section comprises of long answer-type questions (LA) of 5 marks each)

17 In sports day activities of Delhi Public School, the lines have been drawn with chalk powder in rectangular shaped field OBCD. Each line is 1/2 m apart from each other. 60 flower pots have been placed at a distance of 1/2 m from each other along OD. Yamini runs 14th of the distance OD on the 3rd line and plants a red flower. Kamla runs 15th of the distance OD on the 7th line and plants a yellow flower.



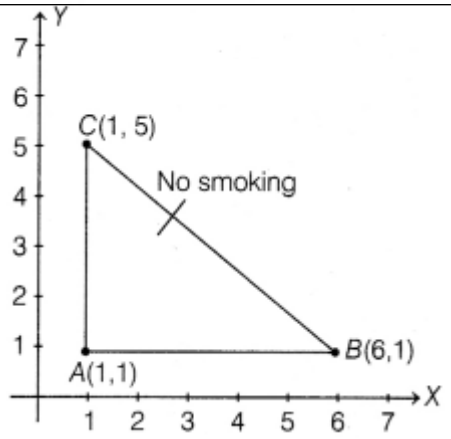
Based on the above information, answer the following questions
(i) Find the distance between red and yellow flowers. (1)
(ii) Find the area of rectangular field. (2)

(iii) Find the length of the diagonal of the rectangular field. (2)
(iv) What is the length of the rectangle field? (1)

18 The mid-points D, E, F of the sides of a triangle ABC are (3, 4), (8, 9) and (6, 7). Find the coordinates of the vertices of the triangle.

19 No Smoking Campaign

All of them know that smoking is injurious for health. So, college students decide to make a campaign.



To raise social awareness about hazards of smoking, a school decided to start "No SMOKING" campaign. 10 students are asked to prepare campaign banners in the shape of triangle (as show in the figure)

On the basis of above information, answer the following questions.

(i) If cost of per cm^2 of banner is ₹ 2, then find the overall cost incurred on such campaign. [2]

If we want to draw a circumscribed circle of given, then find the coordinates of the centre of circle. [2]

(ii) If we draw the image of figure about the line BC, then find the total area. [1]

(iii) Find the centroid of the given triangle. [1]