

Maxprap. Chapter wise Series Class 10th – Mathematics

Class : 10th

Topic : Coordinate Geometry

Max. Marks : 50

Duration : 2 Hrs

Sections: A (MCQs), B (Short Answer-I), C (Short Answer-II), D (Long Answer), E (Case-Based).

General Instructions:

- (i). All questions are compulsory.
- (ii). This question paper contains 23 questions divided into five Sections A, B, C, D and E.
- (iii). Section A comprises of 10 MCQs of 1 mark each. Section B comprises of 5 questions of 2 marks each. Section C comprises of 4 questions of 3 marks each. Section D comprises of 2 question of 5 marks each and Section E comprises of 2 Case Study Based Questions of 4 marks each.
- (iv). There is no overall choice.
- (v). Use of Calculators is not permitted.
- (vi). Draw neat figures wherever required. Take $\pi = 22/7$, wherever required if not stated.

Section A

Questions 1 to 10 carry 1 mark each

1. If $P(\frac{a}{3}, 4)$ is the mid - point of the line segment joining the points Q (- 6, 5) and R (- 2, 3), then the value of a is
a) - 6 b) - 12 c) 12 d) - 4
2. The coordinates of the mid – point of the line segment joining the points (x_1, y_1) and (x_2, y_2) is given by
a) $(\frac{x_1-x_2}{2}, \frac{y_1-y_2}{2})$ b) $(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$ c) $(\frac{x_1-y_1}{2}, \frac{x_2-y_2}{2})$ d) $(\frac{x_1+y_1}{2}, \frac{x_2+y_2}{2})$
3. The distance of the point (4, 5) from x – axis is:
a) 5 b) 1 c) 4 d) 9
4. The distance between the points (6, 2) and (- 6, 2) is:
a) $6\sqrt{2}$ units b) 12 units c) 6 units d) $2\sqrt{6}$ units
5. In what ratio does x - axis divide line segment joining the points A(2, - 3) and B(5, 6)?
a) 2 : 3 b) 3 : 5 c) 2 : 1 d) 1 : 2
6. The distance of the point (4, 7) from the x - axis is
a) 11 b) $\sqrt{65}$ c) 4 d) 7
7. If x is a positive integer such that the distance between points P (x, 2) and Q (3, - 6) is 10 units, then x =
a) - 3 b) - 9 c) 3 d) 9

8. The distance between the points $(2, -3)$ and $(-2, 3)$ is:

- a) 10 units b) $2\sqrt{13}$ units c) 5 units d) $13\sqrt{2}$ units

Assertion(A)/Reason(R) Based (9-10): In the following questions, a statement of assertion (A) is followed by a statement of Reason (R). Choose the correct answer out of the following choices.

- a) Both A and R are true and R is the correct explanation of A.
b) Both A and R are true but R is not the correct explanation of A.
c) A is true but R is false.
d) A is false but R is true.

9. Assertion (A): Mid – point of a line segment divides the line segment in the ratio 1 : 1.

Reason (R): The ratio in which the point $(-3, k)$ divides the line segment joining the points $(-5, 4)$ and $(-2, 3)$ is 1 : 2.

10. Assertion (A): If the points $A(4, 3)$ and $B(x, 5)$ lie on a circle with centre $O(2, 3)$, then the value of x is 2.

Reason (R): Centre of a circle is the mid - point of each chord of the circle.

SECTION – B

Questions 11 to 15 carry 2 marks each

11. In what ratio does the point $P(2, 5)$ divide the join of $A(8, 2)$ and $B(-6, 9)$?
12. Find the points on the x – axis, each of which is at a distance of 10 units from the point $A(11, -8)$.
13. Show that points $(-3, -7)$, $(4, 7)$ and $(5, 9)$ are collinear.
14. Check whether $(5, -2)$, $(6, 4)$ and $(7, -2)$ are the vertices of an isosceles triangle.
15. Find a relation between x and y such that the point (x, y) is equidistant from the points $(7, 1)$ and $(3, 5)$.

SECTION – C

Questions 16 to 19 carry 3 marks each

16. Show that the points $A(1, 7)$, $B(4, 2)$, $C(-1, -1)$ and $D(-4, 4)$ are the vertices of a square.
17. Find the ratio in which the y - axis divides the line segment joining the points $(6, -4)$ and $(-2, -7)$. Also find the point of intersection.
18. Using the distance formula, show that the given points are collinear $(-1, -1)$, $(2, 3)$ and $(8, 11)$.

19. If the points A ($a, -11$), B ($5, b$), C ($2, 15$) and D ($1, 1$) are the vertices of a parallelogram ABCD, find the values of a and b .

SECTION – D

Questions 20 to 21 carry 5 marks each

20. Show that A($0, -2$), B($3, 1$), C($0, 4$) and D($-3, 1$) are the vertices of a square.

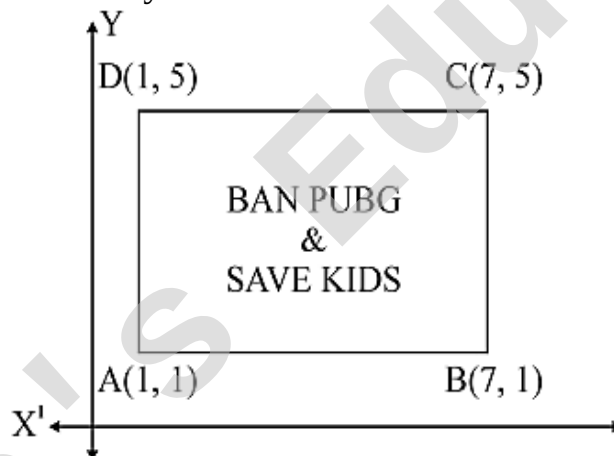
21. If the coordinates of the mid - points of the sides of a triangle are ($1, 1$), ($2, -3$) and ($3, 4$), find the vertices of the triangle.

SECTION – E (Case Study Based Questions)

Questions 22 & 23 carry 4 marks each

22. Read the following text carefully and answer the questions that follow:

Use of mobile screen for long hours makes your eye sight weak and give you headaches. Children who are addicted to play “PUBG” can get easily stressed out. To raise social awareness about ill effects of playing PUBG, a school decided to start ‘BAN PUBG’ campaign, in which students are asked to prepare campaign board in the shape of a rectangle. One such campaign board made by class X student of the school is shown in the figure.



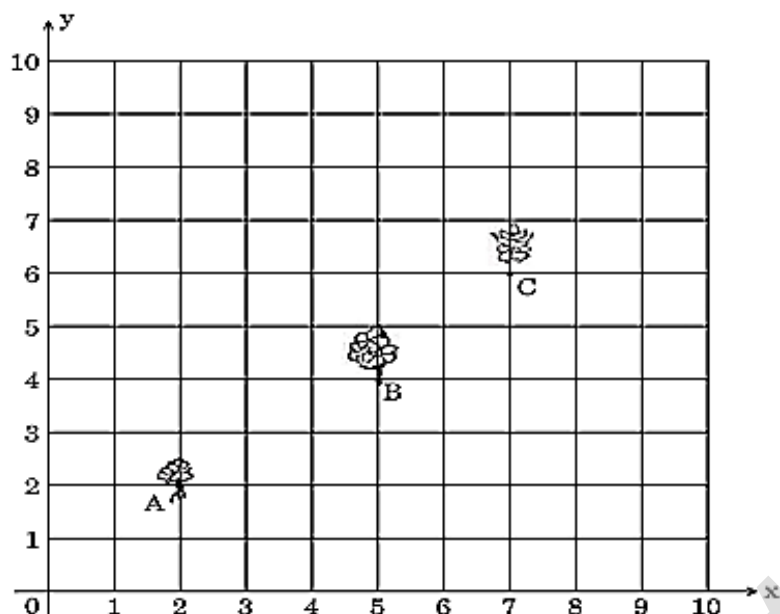
- a) Find the coordinates of the point of intersection of diagonals AC and BD. (1)
- b) Find the length of the diagonal AC. (1)
- c) Find the area of the campaign Board ABCD. (2)

OR

Find the ratio of the length of side AB to the length of the diagonal AC. (2)

23. Read the following text carefully and answer the questions that follow:

Ritu has a $10\text{ m} \times 10\text{ m}$ kitchen garden attached to her kitchen. She divides it into a 10×10 grid and wants to grow some vegetables and herbs used in the kitchen. She puts some soil and manure in that and sow a green chilly plant at A, a coriander plant at B and a tomato plant at C. Her friend Kavya visited the garden and praised the plants grown there. She pointed out that they seem to be in a straight line. See the below diagram carefully:



- d) Find the distance between A and B? (1)
- e) Find the mid - point of the distance AB? (1)
- f) Find the distance between B and C? (2)
- OR**
- Find the mid-point of BC. (2)

Coordinate Geometry Paper Details – Analysis

Objective Questions

MCQ 1 marks x 8 question = 8

Assertion Reason 1 marks x 2 question = 2

Subjective

Short type I 2 marks x 5 question = 10

Short type II 3 marks x 4 question = 12

Long Type 5 marks x 2 question = 10

Case Studies Based

Case 1 4 marks

Case 2 4 marks

Total = 50 marks Your Score =