Coordinate Geometry

Assertion & Reason Type Questions

Directions: In the following questions, a statement of Assertion (A) is followed by a statement of a Reason (R). Choose the correct option:

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.

Q1. Assertion (A): The point (−3, 0) lies on Y-axis and (0, 4) lies on X-axis.

Reason (R): Every point on the X-axis has zero distance from X-axis and every point on the Y-axis has zero distance from Y-axis.

Answer : (d) Assertion (A): Point (−3, 0) has y-coordinate zero, so it lies on X-axis. And point (0, 4) has x-coordinate zero so it lies on Y-axis.

Thus, Assertion (A) is false.

Reason (R): It is true to say that every point on the X-axis has zero distance from X-axis and every point on the Y-axis has zero distance from Y-axis.

Hence, Assertion (A) is false but Reason (R) is true.

Q2. Assertion (A): The ordinate of a point (3, 7) is 7.

Reason (R): The perpendicular distance of a point from X-axis is said to be an ordinate.

Answer : (a) Assertion (A): It is true to say that the ordinate of a point (3, 7) is 7, which is perpendicular distance from point to the X-axis.

Reason (R): It is also true to say that the perpendicular distance of a point from X-axis is said to be an ordinate.

Hence, both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).

Q3. Assertion (A): A point whose abscissa is 3 and ordinate is −4 lies in IV quadrant.

Reason (R): A point whose sign is the form of (−, +) lies in the IInd quadrant.

Answer : (b) Assertion (A): It is true to say that point (3, −4) lies in IV quadrant.

Reason (R): It is also true to say that point having sign of the form (−, +) lies in the II quadrant.

Hence, both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).

Q4. Assertion (A): If the ordinate of a point is equal to its abscissa, then the point lies either in the Ist quadrant or in the IInd quadrant.

Reason (R): A point having both coordinates are negative, will lie in IIIrd quadrant.

Answer : (d) Assertion (A): If the ordinate of a point is equal to its abscissa, then point lies either in the Ist quadrant or in the IInd quadrant.

So, Assertion (A) is false.

Reason (R): It is true to say that a point having both coordinates are negative, it will be in lllrd quadrant.

Hence, Assertion (A) is false but Reason (R) is true.