7. **Assertion (A):** If the diagonals of a quadrilateral bisect each other at right angles then it is necessarily a square.

**Reason (R):** Every square is a rectangle.

## CASE-BASED QUESTIONS

**Directions (Questions 8 to 12):** *Examine the following case study carefully and answer the questions that follow.*

During a mathematics class, a teacher once gave her students a surprise test to review their knowledge of basic concepts on quadrilaterals. She mentioned the special properties of specific quadrilaterals on different slips and asked each of her students to pick one slip each and identify the quadrilaterals from the given property.

8. Student A picked the following slip.

| A quadrilateral whose all sides, diagonals and angles are equal |
|---|

A's reply would be

(a) trapezium (b) rhombus (c) rectangle (d) square

9. Student B picked the following slip.

| A quadrilateral whose adjacent sides are equal |
|---|

B's reply would be

(a) rectangle (b) parallelogram

(c) trapezium (d) kite

10. Student C picked the following slip.

| A quadrilateral which has the properties of a kite and a parallelogram |
|---|

C's reply would be

(a) trapezium (b) rhombus

(c) rectangle (d) isosceles trapezium

11. Student D picked the following slip.

| A quadrilateral in which only one diagonal bisects the other |
|---|

D's reply would be

(a) rectangle (b) rhombus

(c) trapezium (d) kite

12. Student E picked the following slip.

| A quadrilateral in which each diagonal bisects the angles at the vertices through which it passes |
|---|

E's reply would be

(a) parallelogram (b) rectangle

(c) rhombus (d) square