

## Chapter - 6

### Triangles

#### ( Assertion and Reasoning Questions )

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**In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:**

- (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.

**Q.1. Assertion (A) :** If two sides of a right angle are 7 cm and 8 cm, then its third side will be 9 cm.

**Reason (R) :** In a right triangle, the square of the hypotenuse is equal to the sum of the squares of the other two sides.

**Q.2. Assertion (A) :** If  $\triangle ABC$  and  $\triangle PQR$  are congruent triangles, then they are also similar triangles.

**Reason (R) :** All congruent triangles are similar but the similar triangles need not be congruent.

**Q.3. Assertion (A) :** In the given figures,  $\triangle ABC \sim \triangle GHI$ .

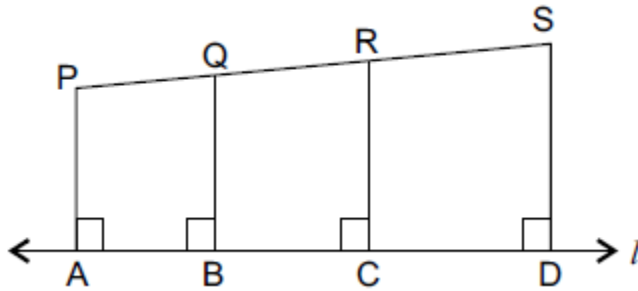
**Reason (R) :** If the corresponding sides of two triangles are proportional, then they are similar.

**Q.4. Assertion (A) :** The sides of two similar triangles are in the ratio 2 : 5, then the areas of these triangles are in the ratio 4 : 25.

**Reason (R) :** The ratio of the areas of two similar triangles is equal to the square of the ratio of their sides.

**Q.5. Assertion (A) :** In the given figure,  $PA \parallel QB \parallel RC \parallel SD$ .

**Reason (R) :** If three or more line segments are perpendicular to one line, then they are parallel to each other.



**Q.6. Assertion (A) :** In the  $\Delta ABC$ ,  $AB = 24$  cm,  $BC = 10$  cm and  $AC = 26$  cm, then  $\Delta ABC$  is a right angle triangle.

**Reason (R) :** If in two triangles, their corresponding angles are equal, then the triangles are similar.

**-X-X-X-**

### ANSWER KEY

**Q.1 :** (d)

**Q.2 :** (a)

**Q.3 :** (a)

**Q.4 :** (a)

**Q.5 :** (a)

**Q.6 :** (b)