

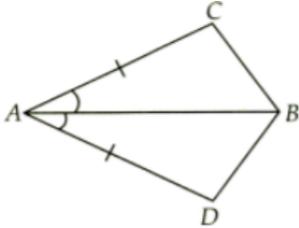


then each of the equal internal angle is  $55^\circ$ .

**Reason (R):** A triangle with one of its angle  $90^\circ$ , is called a right triangle.

- 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):** In a quadrilateral ABCD,  $AC = AD$  and AB bisect  $\angle A$  (see figure) by SAS congruence criteria. [1]

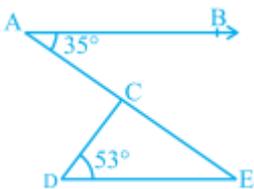


**Reason (R):** Two triangles are congruent if two sides and the included angle of one triangle is equal to the corresponding two sides and included angle of the other.

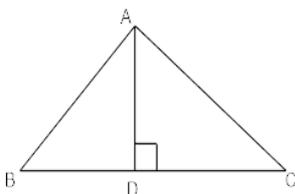
- a) Both A and R are true and R is the correct explanation of A.
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**Section B**

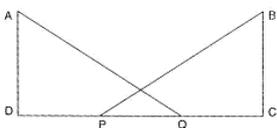
10. In the given figure, if  $AB \parallel DE$ ,  $\angle BAC = 35^\circ$  and  $\angle CDE = 53^\circ$  find  $\angle DCE$ . [2]



11. In the given figure  $\triangle ABC$  is right angled at A. AD is drawn perpendicular to BC. Prove that  $\angle BAD = \angle ACB$  [2]

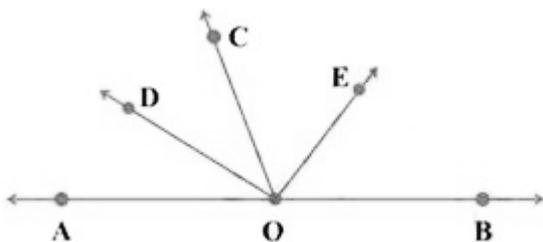


12. In figure,  $AD \perp CD$  and  $BC \perp CD$ . If  $AQ = BP$  and  $DP = CQ$ . Prove that  $\angle DAQ = \angle CBP$ . [2]



**Section C**

13. In the below fig. If OD is the bisector of  $\angle AOC$ , OE is the bisector of  $\angle BOC$  and  $OD \perp OE$ . Show that the points A, O and B are collinear. [3]

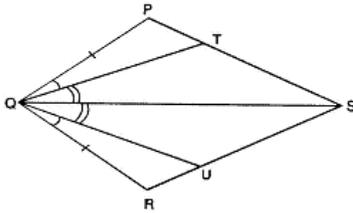


14. AD is an altitude of an isosceles triangle ABC in which  $AB = AC$ . Show that [3]

- i. AD bisects BC
- ii. AD bisects  $\angle A$ .

OR

In figure, PQRS is a quadrilateral and T and U are respectively points on PS and RS such that  $PQ = RQ$ ,  $\angle PQT = \angle RQU$  and  $\angle TQS = \angle UQS$ . Prove that  $QT = QU$ .



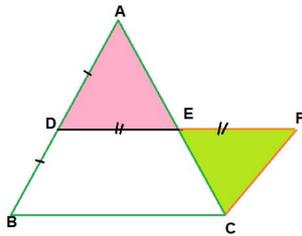
**Section D**

15. In a right triangle, ABC, D is the mid-point of side AC such that  $BD = \frac{1}{2} AC$ . Show that  $\angle ABC$  is a right angle. [5]

**Section E**

16. Read the following text carefully and answer the questions that follow: [4]

Haresh and Deep were trying to prove a theorem. For this they did the following



- i. Draw a triangle ABC
- ii. D and E are found as the mid points of AB and AC
- iii. DE was joined and DE was extended to F so  $DE = EF$
- iv. FC was joined.

**Questions:**

- i.  $\triangle ADE$  and  $\triangle EFC$  are congruent by which criteria? (1)
- ii. Show that  $CF \parallel AB$ . (1)
- iii. Show that  $CF = BD$ . (2)

**OR**

Show that  $DF = BC$  and  $DF \parallel BC$ . (2)