

**SECTION A 1 Mark each**

- Q1. Trigonometry was invented because its need arose in \_\_\_\_\_
- Q2. A tree stands vertically on the ground. From a point on the ground, which is 45 m away from the foot of the tree, the angle of elevation of the top of the tree is found to be  $60^\circ$ . Find the height of the tower
- Q3. The length of shadow of a tree is  $\sqrt{3}$  times its height. Find the angle of elevation.
- Q4. If the angle of elevation of a tree from a certain distance on the ground is  $45^\circ$  then the height of tree = \_\_\_\_\_.
- Q5. What is angle of elevation.

**SECTION B 2 Marks each**

- Q6. An observer 1.65 m tall is 38.35 m away from a tower. The angle of elevation of the top of the tower from her eyes is  $45^\circ$ . What is the height of the tower?
- Q7. If The shadow of a tree standing on a level ground is found to be 30 m longer when the Sun's altitude is  $45^\circ$  than when it is  $60^\circ$ . Find the height of the tower.

**SECTION C 3 Marks each**

- Q8. Two poles of equal heights are standing opposite each other on either side of the road, which is 80 m wide. From a point between them on the road, the angles of elevation of the top of the poles are  $60^\circ$  and  $30^\circ$ , respectively. Find the height of the poles and the distances of the point from the poles.
- Q9. The angles of elevation of the top of a tree from points at distances of 4m and 16m from the base of the tree and in the same straight line with it are complementary. Find the height of the tree
- Q10. An aeroplane flying horizontally at a height of 1.5 km above the ground is observed at a certain point on earth to subtend an angle of  $60^\circ$  After 15 seconds its angle of elevation is  $30^\circ$ . Calculate the speed of the aeroplane in km/h.

**SECTION D 6 Marks each**

- Q11. From the top of a house 6m high, the angle of elevation of the top of a tree is found to be  $30^\circ$  from the bottom of the same house, the angle of elevation of the top of the tree is found to be  $60^\circ$  Find the height of the tree and the distance between the tree and the house.
- Q12. A man on the top of a vertical observation building observes a truck moving at a uniform speed coming directly towards it. If it takes 18 minutes for the angle of depression to change from  $30^\circ$  to  $60^\circ$  how soon after this will the truck reach the observation building?