Section A (10 Marks)

1. State the Pythagoras Theorem.
2. In a right-angled triangle, the hypotenuse is 10 cm and one side is 6 cm. Find the length of the other side.
3. A ladder 10 m long reaches a window 8 m above the ground. Find the distance of the foot of the ladder from the base of the wall.
4. A pole 6 m high casts a shadow $2\sqrt{3}$ m long on the ground. Find the angle of elevation of the sun.
5. A kite is flying at a height of 60 m above the ground. The string attached to the kite is temporarily tied to a point on the ground. The inclination of the string with the ground is 60°. Find the length of the string.

Section B (10 Marks)

6. A tree breaks due to storm and the broken part bends so that the top of the tree touches the ground making an angle of 30° with it. The distance between the foot of the tree to the point where the top touches the ground is 8 m. Find the height of the tree.
7. A man on a cliff observes a boat at an angle of depression of 30°. The boat is approaching the cliff at a uniform speed. Six minutes later, the angle of depression becomes 60°. Find the time taken by the boat to reach the cliff from the point where it was first observed.
8. From a point on the ground, the angles of elevation of the bottom and top of a transmission tower fixed at the top of a 20 m high building are 45° and 60° respectively. Find the height of the tower.
9. Two poles of equal heights are standing opposite each other on either side of a road. From a point between them on the road, the angles of elevation of the top of the poles are 60° and 30° respectively. If the distance of the point from one pole is 40 m, find the distance between the poles and the height of each pole.
10. A vertical pole of length 6 m casts a shadow 4 m long on the ground and at the same time a tower casts a shadow 28 m long. Find the height of the tower.