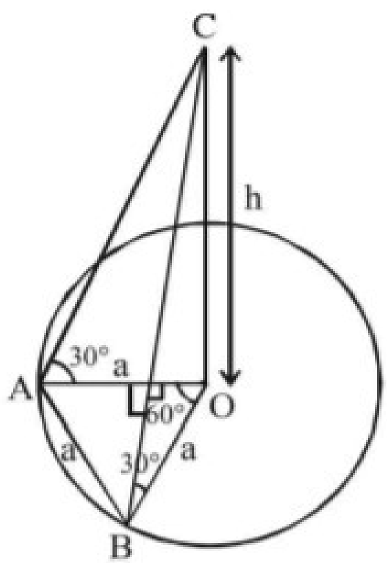
1 . A tower stands at the centre of a circular park. A and B are two points on the boundary of the park such that AB (= a) subtends an angle of 60° at the foot of the tower, and the angle of elevation of the top of the tower from A or B is 30°. The height of the tower is **[2007]**

(a) $a/\sqrt{3}$ (b) $a\sqrt{3}$ (c) $2a/\sqrt{3}$ (d) $2a\sqrt{3}$.

Solution: -

1 . **(a)** In the ΔAOB, $\angle AOB = 60°$, and $\angle OBA = \angle OAB$ (since $OA = OB = AB$ radius of same circle). $\therefore$ ΔAOB is a equilateral triangle. Let the height of tower is h



m. Given distance between two points A & B lie on boundary of circular park, subtends an angle of 60° at the foot of the tower is AB i.e. $AB = a$. A tower OC stands at the centre of a circular park. Angle of elevation of the top of the tower from A and B is 30°.

In ΔOAC $\tan 30° = \frac{h}{a} \Rightarrow \frac{1}{\sqrt{3}} = \frac{h}{a} \Rightarrow h = \frac{a}{\sqrt{3}}$