

## SAMPLE PAPER 7: PAPER 2

### QUESTION 3 (25 MARKS)

#### Question 3 (a) (i)

**Theorem**

- (1) The perpendicular from the centre to a chord bisects the chord.
- (2) The perpendicular bisector of a chord passes through the centre.

$$3^2 + d^2 = 5^2$$

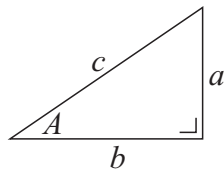
$$9 + d^2 = 25$$

$$d^2 = 25 - 9$$

$$d^2 = 16$$

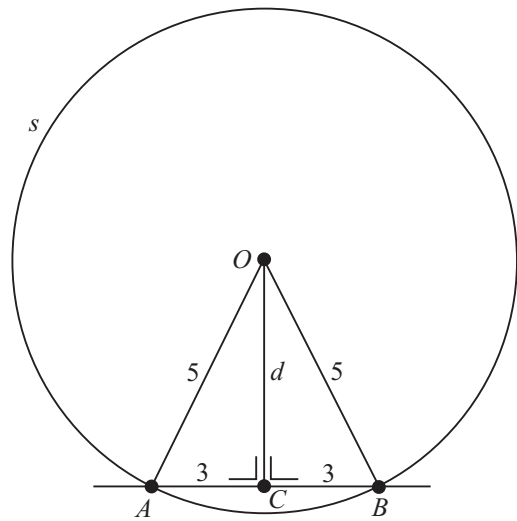
$$\therefore d = \sqrt{16} = 4$$

**PYTHAGORAS**



$$\sin A = \frac{a}{c}$$

$$c^2 = a^2 + b^2$$



#### Question 3 (a) (ii)

$$\sin |\angle AOC| = \frac{3}{5}$$

$$\therefore |\angle AOC| = \sin^{-1}\left(\frac{3}{5}\right) = 36.87^\circ$$

$$|\angle AOB| = 2|\angle AOC| = 2 \times 36.87^\circ = 73.74^\circ$$

#### Question 3 (b)

**Theorem:** The angle at the centre of a circle standing on a given arc is twice the angle at any point of the circle standing on the same arc.

$$|\angle AOB| = 2|\angle ACB|$$

$$\therefore |\angle ACB| = \frac{1}{2} \times 73.74^\circ = 36.87^\circ$$

