



SHIKSHA CLASSES

Subject : Geometry

QUESTION PAPER

Total Marks : 20

Class : X

3. Circle

Time : 1 Hour

Q. 1 A) Choose the correct alternative from Objectives given below. (2)

1) Two circles of radii 5.5 cm and 3.3cm respectively touch each other. what is the distance between their centers?

- a) 4.4cm b) 8.8cm c) 2.2cm d) 8.8cm or 2.2cm

2) $\angle ACB$ is inscribed in arc ACB of a circle with centre O. If $\angle ACB = 65^\circ$, find $m(\text{arc ACB})$.

- a) 65° b) 130° c) 295° d) 230°

Q. 1 B) Solve any one of the following question. (1)

1) What is the distance between two parallel tangents of a circle having radius, 4.5cm? Justify your answer.

2) O is the centre of a circle. TA is the tangent to the circle at the point T. What is the measure of $\angle OTA$?

Q. 2 : A) Attempt any one of the following questions (2)

1) The distance between the centers of two circles touching internally is 5cm and touching externally is 19cm. Find the radii of the circles.

→ Let r_1 and r_2 be radii of circles.

Distance between center of internally touching circles is equal to difference of radii

$$\therefore r_1 - r_2 = 5\text{cm.}$$

$$\therefore r_1 = 5 + \square \quad \text{---(i)}$$

Distance between centers of internally touching circles is equal to

$$\therefore r_1 + r_2 = \square \quad \text{---(ii)}$$

from (i) and (ii)

$$5 + r_1 + r_2 = 19$$

$$2r_2 = 19 - \boxed{} = 14$$

$$r_2 = \frac{14}{\boxed{}} = 7$$

$$r_2 = 7\text{cm}$$

$$r_1 = 5 + r_2 = 5 + 7 = \boxed{} \text{cm.}$$

∴ radii of circles are $\boxed{}$ cm and $\boxed{}$ cm.

2) If radii of two circles are 4cm and 2.8cm. Draw figure of these circles touching each other internally.

Q. 2 : B) Attempt any one of the following questions

(2)

1) □MRPN is Cyclic, $\angle R = (5x - 13)^\circ$, $\angle N = (4x + 4)^\circ$. Find measures of $\angle R$ and $\angle N$.

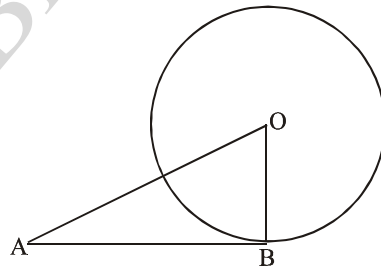
2) In the adjoining figure O is the centre of the

Circle. OA = 8.5cm Line AB is a

tangent to the circle at the point B.

If AB = 7.5cm, find the

radius of the circle.



Q. 3 : A) Attempt any one of the following questions

(3)

1) If secants containing chords AB and CD of a circle intersect outside the circle in

point E, then $AE \times EB = CE \times ED$.

→ Construction : Draws AD and seg BC.

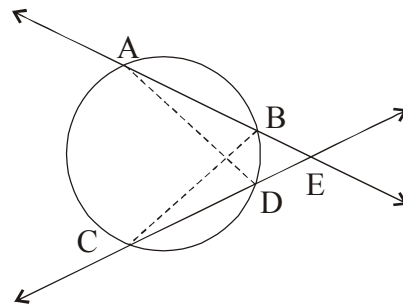
Proof: In $\triangle ADE$ and $\triangle CBE$

$$\angle AED \cong \angle CEB \quad \text{---(common angle)}$$

$$\angle DAE \cong \angle BCE$$

(Angles inscribed in same arc).

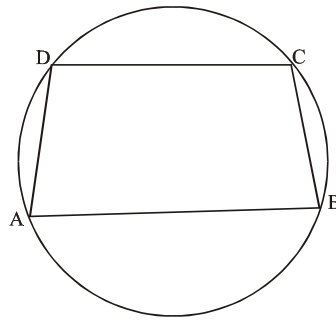
$$\therefore \boxed{} \sim \boxed{} \quad \text{(AA test)}$$



$$\therefore \frac{\square}{\square} = \frac{\square}{\square} = \dots$$

(corresponding sides of similar triangle).

$$\square \times \square = \square \times \square .$$



- 2) $\square ABCD$ is a cyclic quadrilateral in which side $AB \parallel$ side DC prove that $AD = BC$

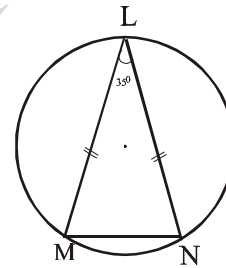
Q. 3 : B) Attempt any one of the following questions (3)

- Point M, in the interior of the circle, is the point of intersection of two chords AB and CD of the same circle. show that $CM \times BD = BM \times AC$.
- Prove that opposite angles of a cyclic quadrilateral are supplementary.

Q. 4 : Attempt any one of the following question (4)

- 1) In the adjoining figure Chord $LM \cong$ Chord LN , $\angle L = 35^\circ$

- $m(\text{arc } MN)$
- $m(\text{arc } LN)$



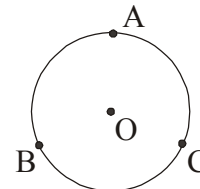
- 2) point O is the centre of a circle. Line 'a' & line 'b' are parallel tangents to the circle at P and Q. Prove that segment PQ is a diameter of the circle.

Q. 5 : Attempt any one of the following question (3)

- 1) Prove that corresponding arcs of congruent chords of a circle (or congruent circles) are congruent.

- 2) A, B, C are any points on the circle with center 'O'

i) Write the names of all arcs formed due to these points.



ii) If $m(\text{arc } BC) = 110^\circ$ and $m(\text{arc } AB) = 125^\circ$ find measures of all remaining arcs.
