Std.: 10 (English)   **Maths - II**   **Marks: 20**

Date: **Time: 1 hrs**

Chapter: 3

Q.1   Choose the carrect alternatives.   **(3)**

1) ∠ACB is inscribed in arc ACB of a circle with centre O. If ∠ACB = 65°, find m(arc ACB).

a. 65°   b. 130°   c. 295°   d. 230°

2) A circle touches all sides of a parallelogram. So the parallelogram must be a ....

a. rectangle   b. rhombus   c. square   d. trapezium

3)
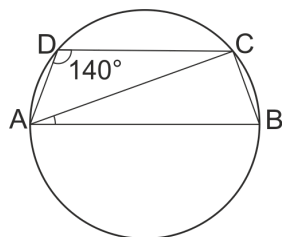
ABCD is a cyclic quadrilateral such that AB is a diameter of the circle circumscribing it and ∠

ADC = 140^0 , then ∠BAC is equal to

a. 80^0 b. 50^0 c. 40^0 d. 30^0

Q.2   Solve the following question. (Any Two)   **(4)**

1)

In the figure, m (arc APC) = 100° and ∠BAC = 70°.

Find i. ∠ABC   ii. m (arc BQC).
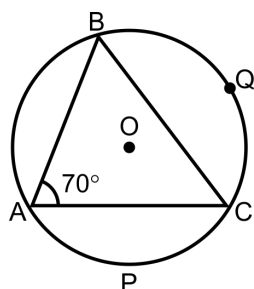
2)

In the adjoining figure circle with centre D touches the sides of ∠ACB at A and B. If ∠ACB =

52°, find measure of ∠ADB.
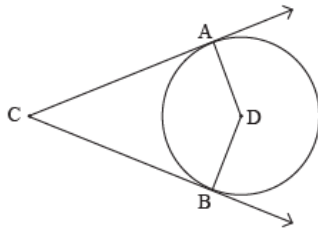
3) If radii of two circles are 4 cm and 2.8 cm. Draw figure of these circles touching each other -
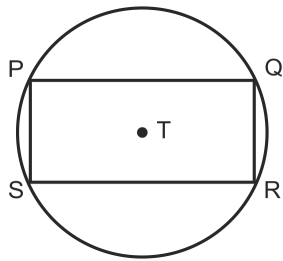(i) externally (ii) internally.

Q.3   Solve the following question. (Any Two) **(6)**

1) In the figure, a rectangle PQRS is inscribed in a circle with centre T.
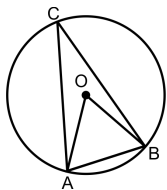
Prove that, (i) arc PQ ≅ arc SR

(ii) arc SPQ ≅ PQR

2) In figure, in a circle with centre O, length of chord AB is equal to the radius of the circle. Find measure of each of the following.

i) ∠AOB   ii) ∠ACB   iii) arc AB   iv) arc ACB.

3) In the figure, two circles intersect each other at points A and E. Their common secant through E intersects the circles at point B and D. The tangents of the circles at point B and D

intersect each other at point C. Prove that ▢ABCD is cyclic.

Q.4 **Solve the following question. (Any One)** **(4)**

1)

(1) If m(arc CE) = 54°, m(arc BD) = 23°, find measure of ∠CAE.

(2) If AB = 4.2, BC = 5.4, AE = 12.0, find AD
(3) If AB = 3.6, AC = 9.0, AD = 5.4, find AE

2)

In △ABC, P, Q and R are the midpoints of sides AB, AC and BC respectively.

Seg AS ⊥ side BC. Prove that ▱PQRS is a cyclic quadrilateral.

Q.5 **Solve the following question. (Any One)** **(3)**

1) AB and AC are the two chords of a circle whose radius is r. If p and q are the distance of chord AB and CD, from the centre respectively and if AB = 2AC then proved that $4q^2 = p^2 + 3r^2$.

2) In line l touches the circle with centre O at point P. Q is the mid point of radius OP. RS is a chord through Q such that chords RS || line l. If RS = 12 find the radius of the circle.