Note:-
1. All Questions are compulsory.
2. Numbers on the right indicate full marks.

Q.1 If radii of two concentric circles are 4 cm and 5 cm then the length of each chord of one circle which is tangent to the other circle is_____. **(1)**

A) 3 cm   B) 6 cm

C) 9 cm   D) 1 cm

Ans : B

Q.2 If the angle between two radii of a circle is 130°,the angle between the tangents at the ends of radii is_____. **(1)**

A) 90°   B) 50°

C) 70°   D) 40°

Ans : B

Q.3 The circles touch each other externally at P. AB is common tangent to the circle touching them at A and B.The value of ∠APB is_____. **(1)**

A) 30°   B) 45°

C) 60°   D) 90°

Ans : D

Q.4 Seg XZ is a diameter of a circle. Point Y lies in its interior. How many of the following statements are true? **(1)**

A) it is not possible that $\angle XYZ$ is an acute angle

B) $\angle XYZ$ can't be a right angle

C) $\angle XYZ$ is an obtuse angle

D) can't make a definite statement for measure of $\angle XYZ$

Ans : C

Q.5 In a cyclic □ABCD, twice the measure of ∠A is thrice the measure of ∠C. Find the measure of ∠C? **(1)**

A) 36° B) 72°

C) 90° D) 108°

Ans : B

Q.6 Chords AB and CD of a circle intersect inside the circle at point E. If AE = 5.6, EB = 10, CE = 8, find ED. **(1)**

A) 7   B) 8

C) 11.2   D) 9

Ans : A

Q.7 ∠ACB is inscribed in arc ACB of a circle with centre O. If ∠ACB = 65°, find m(arc ACB). **(1)**

    A) 65°   B) 130°

    C) 295°   D) 230°

Ans : D

Q.8 If two circles are touching externally, how many common tangents of them can be drawn? **(1)**

    A) one   B) two
    C) three   D) four

Ans : B

Q.9 Length of a tangent segment drawn from a point which is at a distance 12.5 cm from the centre of a circle is 12 cm, find the diameter of the circle. **(1)**

    A) 25 cm   B) 24 cm
    C) 7 cm   D) 14 cm

Ans : C

Q.10 A circle touches all sides of a parallelogram. So the parallelogram must be a _____. **(1)**

    A) rectangle   B) rhombus
    C) square   D) trapezium

    For a circle to touch all sides of the parallelogram, length of all sides must be equal. Parallelogram with all sides equal can be rhombus. A circle will touch all sides of rhombus.
Ans : B

Q.11 Two circles intersect each other such that each circle passes through the centre of the other. If the distance between their centres is 12, what is the radius of each circle? **(1)**

    A) 6 cm   B) 12 cm
    C) 24 cm   D) can't say

    If the two circle passes through their respective centre, that means two circles have equal radius. The distance between their centres is equal to the radius of both circle.As it is given that distance between their respective centres is 12 cm.Hence, the radius of each circle = 12 cm
Ans : B

Q.12 Two circles of radii 5.5 cm and 3.3 cm respectively touch each other. What is the distance between their centers? **(1)**

   A) 4.4 cm   B) 8.8 cm
    C) 2.2 cm   D) 8.8 or 2.2 cm

    If they touch externally = 5.5 + 3.3 = 8.8 and if they touch each other internally then 5.5 – 3.3 = 2.2 cm
Ans : D

Q.13 If two secants of a circle intersect in point 'P' then _____ **(1)**

    A) $\frac{AP}{BP} = \frac{CP}{PD}$ B) AP = BP
    C) CP = CD   D) AP × BP = CP × DP

Ans : D

Q.14 Angle subtended by same arc are _____ **(1)**

A) equal   B) unequal

C) congruent   D) acute

Ans : C

Q.15 An angle subtended by a semicircle at a point outside the circle is _____ angle. **(1)**

A) a right   B) an acute

C) an obtuse   D) 180°

Ans : B

Q.16 Two circles with radius 6 cm and 4 cm touch each other externally the distance between their centres is _____ cm. **(1)**

A) 5   B) 24

C) 6   D) 10

Two circles touch each other externally having radius 6cm & 4 cm
Distance between their centre = 6 + 4
                     = 10 cm

Ans : D

Q.17 The length of one tangent drawn from a point outside a circle is 7 cm the length of other tangent is _____ cm. **(1)**

A) 7   B) 3:5

C) 14   D) 10

Ans : A

Q.18 A chord intersects a circle in _____ points. **(1)**

A) One   B) Many

C) Two   D) More than two

Ans : C

Q.19 Measure of angle inscribed in semicircle is _____ **(1)**

A) 180°   B) 45°

C) 30°   D) 90°

Ans : D

Q.20 Radius of the circle passing through the vertices of a right angled triangle with sides 6 cm, 8 cm and 10 cm is _____ cm. **(1)**

A) 3   B) 4

C) 5   D) 20

Ans : C

Q.21 Three congruent circles with centres A, B and C and with radius 5 cm touch each other. Then perimeter of $\triangle$ABC is _____ cm. **(1)**

A) 15   B) 20

C) 30   D) 40
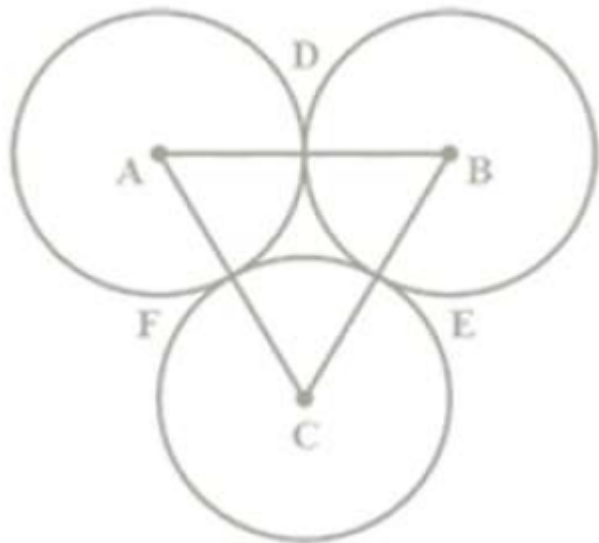
A, B, C are congruent of circles with radius 5 cm. Perimeter of ABC = AB = 5 + 5 = 10, BC = 10 & AC = 10

Perimeter of $\angle$ABC = AB + BC + AC

$\qquad\qquad$ = 10 + 10 + 10

$\qquad\qquad$ = 30 unit

Ans : C

Q.22 A tangent at any point of a circle is _____ to the radius through the point of contact. **(1)**

A) Parallel $\qquad\qquad$ B) Intersecting

C) Perpendicular $\qquad$ D) Slanting

Ans : C

Q.23 The length of radius of a circle with length chord 10 cm is _____ **(1)**

A) 10 cm $\qquad\qquad$ B) 5 cm

C) 20 cm $\qquad\qquad$ D) $10\sqrt{2}$ cm

Length of the chord = 10 cm

Perpendicular drawn from centre of circle to the chord bisect the chord.

$\therefore \quad \frac{10}{2} = 5\,\text{cm}$

Ans : B

Q.24 The distance between two concentric circles □ABCD is cyclic, $\angle$A = x°, $\angle$C = y° then _____ **(1)**

A) x = y $\qquad\qquad$ B) x + y = 180

C) x > y $\qquad\qquad$ D) x < y

Ans : B

Q.25 The distance between two parallel tangent to a circle of radius 5 cm is _____ **(1)**

A) $\sqrt{5}$ cm $\qquad\qquad$ B) 25 cm

C) 2.5 cm $\qquad\qquad$ D) 10 cm

Radius of circle = 5 cm

Distance between the two parallel tangent will be diameter of the circle.

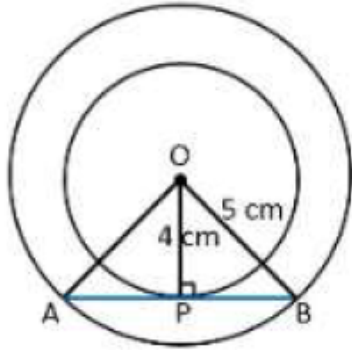Diameter = Two times of radius

$\qquad$ = 10 cm

Ans : D

Q.26 If radii of two concentric circles are 4 cm and arc 5 cm then the length of each chord of one circle which is tangent to the other circle is _____ **(1)**

    A) 3 cm   B) 6 cm

    C) 9 cm   D) 1 cm

Radius of smaller circle = 4cm
Radius of larger circle = 5 cm
So, length of each chord of one circle whichis tangent to other circle.

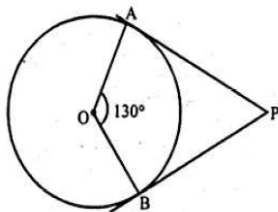By using Pythagoras Theorem,

$OB^2 = OP^2 + PB^2$

$25 = 16 + PB^2$

$PB^2 = 9$

PB = 3

So, length of chord AB = 6 cm

Ans : B

Q.27 If the angle between two radii of a circle is 130°, the angle between the tangents at the ends of radii at their point of intersection is _____ **(1)**

    A) 90°   B) 50°

    C) 70°   D) 40°

OA is the radius and AP is the tangent.

$\angle OAP = 90^O$ similarilary $\angle OBP = 90^O$

$\angle AOB + \angle APB = 180^O$

$130^O + \angle APB = 180^O$
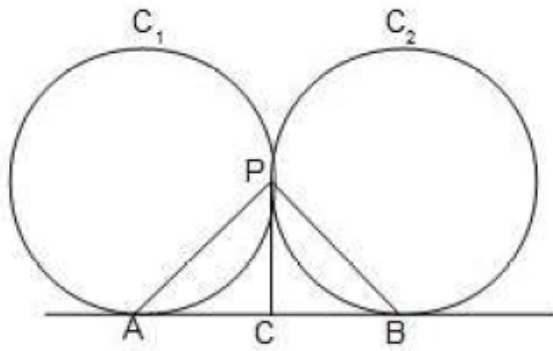
$\angle APB = 180^O - 130^O$

$\angle APB = 50^O$

Ans : B

Q.28 Two circles touch each other externally at P. AB is common tangent to the circle touching them at A and B. The value of $\angle APB$ is _____ **(1)**

    A) 30°   B) 45°

    C) 60°   D) 90°

Two circle touch each other externally at point P. AB is common tangent to circles touches them at A and B. The value of $\angle APB$
$\angle CAP = x°$ and $\angle CBP = y°$.
CA = CP
[Lengths of the tangents from an external point C]
In a $\angle PAC$, $\angle CAP = \angle APC = x°$
similarly CB = CP
[Lengths of the tangents from an external point C]
And in a $\angle PBC$, $\angle CPB = \angle PBC = y°$
Now in a $\angle APB$,
$\angle PAB + \angle PBA + \angle APB = 180°$
[Sum of the interior angles in a triangle]
$x° + y° + (x° + y°) = 180°$
$\qquad 2x° + 2y° = 180°$
$\qquad x° + y° = 90°$
$\angle APB = x° + y° = 90°$
Ans : D

Q.29 A tangent PQ at a point P of a circle of radius 5 cm meats a line through the centre O at a **(1)** point Q such that OQ = 12 cm. PQ = ?

A) 12 cm   B) 13 cm

C) 8.5 cm   D) $\sqrt{119}$ cm
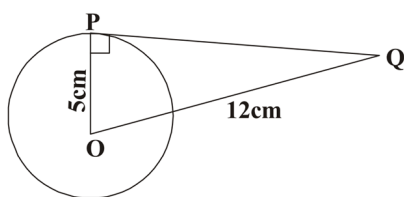
From the figure, PQ is tangent and OP is the radius
$\therefore$ $\angle OPQ = 90°$ [Tangent perpendicular to radius]
    OP = 5 cm, OQ = 12 cm
    In a right angled $\triangle OPQ$,
$\qquad OQ^2 = OP^2 + PQ^2$ [By Pythagoras theorem]
$\qquad 12^2 = 5^2 + PQ^2$
$\therefore \qquad 144 = 25 + PQ^2$
$\therefore \quad 144 - 25 = PQ^2$
$\therefore \qquad 119 = PQ^2$
$\therefore \qquad PQ = \sqrt{119}$ cm

Ans : D