

**CIRCLES**

**Q.1)** The locus of the middle points of equal chords of a circle with centre at O is

- (A) a straight line
- (B) a circle with centre different from O
- (C) a circle with centre at O
- (D) a circle intersecting the given circle at end of the chord

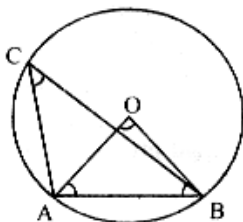
**Q.2)** If a regular hexagon is inscribed in a circle of radius  $r$ , then its perpendicular is

- (A)  $3r$                       (B)  $6r$
- (C)  $9r$                       (D)  $12r$

**Q.3)** AB and CD are two chords of a circle intersecting at the point P outside the circle. If  $PA = 12$  cm,  $CD = 7$  cm and  $PC = 15$  cm, then AB is equal to

- (A) 15.5 cm                  (B) 4 cm
- (C) 8 cm                      (D) 10 cm

**Q.4)** The length of a chord of a circle is equal to the radius of the circle. The angle which this chord subtends on the longer segment of the circle is equal to



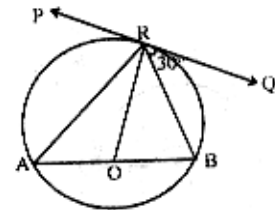
- (A)  $30^\circ$                       (B)  $45^\circ$
- (C)  $60^\circ$                       (D)  $90^\circ$

**Q.5)** If tangents PQ and PR from a point P to a circle with centre O are inclined to each other at an angle of  $80^\circ$ , then  $\angle POA$  is equal to

- (A)  $50^\circ$                       (B)  $60^\circ$

- (C)  $70^\circ$                       (D)  $80^\circ$

**Q.6)** In figure, PQ is a tangent at point P of a circle and  $\angle QRB = 30^\circ$  then  $\angle PRA$  is



- (A)  $30^\circ$                       (B)  $90^\circ$
- (C)  $120^\circ$                   (D)  $60^\circ$

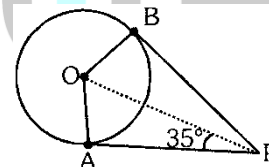
**Q.7)** If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of  $80^\circ$  then  $\angle POA$  is equal to

- (A)  $50^\circ$                       (B)  $60^\circ$
- (C)  $70^\circ$                       (D)  $80^\circ$

**Q.8)** A point P is 10 cm from the centre of a circle. The length of the tangent drawn from P to the circle is 8 cm. The radius of the circle is equal to

- (A) 4 cm                      (B) 5 cm
- (C) 6 cm                      (D) None of these.

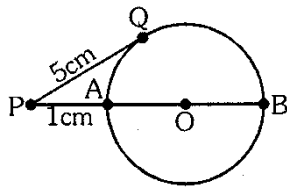
**Q.9)** In figure 10.75, PA and PB are the two tangents drawn to the circle. O is the centre of the circle. A and B are the points of contact of the tangents PA and PB with the circle. If  $\angle OPA = 35^\circ$ , then  $\angle POB =$



- (A)  $55^\circ$                       (B)  $65^\circ$
- (C)  $75^\circ$                       (D)  $85^\circ$

**Q.10)** In fig, O is the centre of the circle. PQ is tangent to the circle and secant PAB passes through the centre O. If  $PQ = 5$  cm and  $PA = 1$

cm, then the radius of the circle is



- (A) 8 cm                      (B) 12cm  
(C) 10cm                     (D) 6cm

**Q.11)** From a point Q, the length of the tangent to a circle is 24 cm and the distance of Q from the centre is 25cm. The radius of the circle is

- (A) 7 cm                      (B) 12 cm  
(C) 15cm                     (D) 24.5 cm

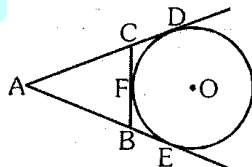
**Q.12)** If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of  $80^\circ$  then  $\angle POA$  is equal to

- (A)  $50^\circ$                       (B)  $60^\circ$   
(C)  $70^\circ$                      (D)  $80^\circ$

**Q.13)** PQ is a tangent drawn from a point P to a circle with centre O and QOP is a diameter of the circle such that  $\angle POR = 120^\circ$ , then  $\angle OPQ$  is

- (A)  $60^\circ$                       (B)  $45^\circ$   
(C)  $30^\circ$                      (D)  $90^\circ$

**Q.14)** In the adjoining figure, if AD, AE and BC are tangents to the circle at D, E and F respectively. Then,

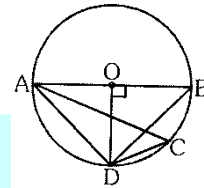


- (A)  $AD = AB + BC + CA$   
(B)  $2AD = AB + BC + CA$   
(C)  $3AD = AB + BC + CA$   
(D)  $4AD = AB + BC + CA$

**Q.15)** The quadrilateral formed by angle bisectors of a cyclic quadrilateral is a

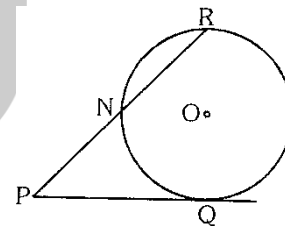
- (A) rectangle  
(B) square  
(C) parallelogram  
(D) cyclic quadrilateral

**Q.16)** In the given figure, AB is the diameter of the circle. Find the value of  $\angle ACD$ :



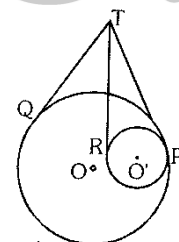
- (A)  $30^\circ$                       (B)  $60^\circ$   
(C)  $45^\circ$                      (D)  $25^\circ$

**Q.17)** In the given figure, PQ is the tangent of the circle. Line segment PR intersects the circle at N and R.  $PQ = 15$  cm,  $PR = 25$  cm, find PN:



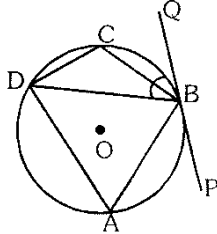
- (A) 15 cm                      (B) 10 cm  
(C) 9 cm                      (D) 6 cm

**Q.18)** In the given figure, there are two circles with the centres O and O' touching each other internally at P. Tangents TQ and TP are drawn to the larger circle and tangents TP and TR are drawn to the smaller circle. Find TQ : TR



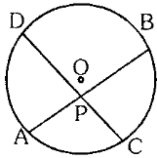
- (A) 8 : 7                      (B) 7 : 8  
(C) 5 : 4                      (D) 1 : 1

**Q.19)** ABCD is a cyclic quadrilateral PQ is a tangent at B. If  $\angle DBQ = 65^\circ$ , then  $\angle BCD$  is :



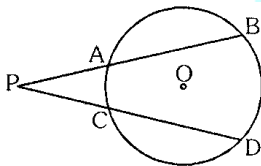
- (A)  $35^\circ$                       (B)  $85^\circ$   
(C)  $115^\circ$                     (D)  $90^\circ$

**Q.20)** In the given figure, AP = 2 cm, BP = 6 cm and CP = 3 cm. Find DP:



- (A) 6 cm                      (B) 4 cm  
(C) 2 cm                      (D) 3 cm

**Q.21)** In the given figure, AP = 3 cm, BA = 5 cm and CP = 2 cm. Find CD :



- (A) 12 cm                      (B) 10 cm  
(C) 9 cm                        (D) 6 cm

**Q.22)** Three circles touch each other externally. The distance between their centre is 5 cm. 6 cm and 7 cm. Find the radii of the circles :

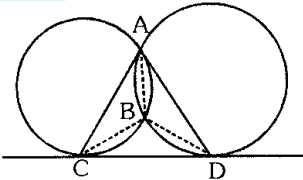
- (A) 2 cm, 3 cm, 4 cm  
(B) 3 cm, 4 cm, 1 cm  
(C) 1 cm, 2.5 cm, 3.5 cm  
(D) 1 cm, 2 cm, 4 cm

**Q.23)** If AB is a chord of a circle, P and Q are two points on the circle different from A and B, then:

- (A) the angle subtended by AB at P and Q are either equal or supplementary .

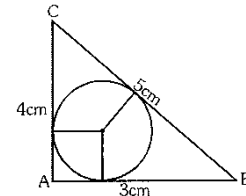
- (B) the sum of the angles subtended by AB at P and Q is always equal two right angles.  
(C) the angles subtended at and Q by AB are always equal.  
(D) the sum of the angles subtended at P and Q is equal to four right angles.

**Q.24)** In the given figure, CD is a direct common tangent to two circles intersecting each other at A and B, then:  $\angle CAD + \angle CBD = ?$



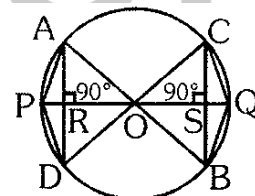
- (A)  $120^\circ$                       (B)  $90^\circ$   
(C)  $360^\circ$                     (D)  $180^\circ$

**Q.25)** ABC is a right angled triangle AB = 3 cm, BC = 5 cm and AC = 4 cm, then the inradius of the circle is :



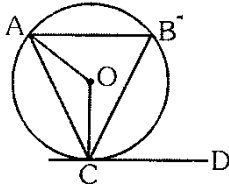
- (A) 1 cm                        (B) 1.25 cm  
(C) 1.5 cm                    (D) none of these

**Q.26)** In the adjoining figure O is the centre of the circle.  $\angle AOD = 120^\circ$ . If the radius of the circle be 'r', then find the sum of the areas of quadrilaterals AODP and OBQC:



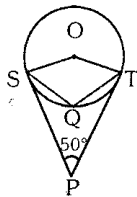
- (A)  $\frac{\sqrt{3}}{2} r^2$                       (B)  $3\sqrt{3}r^2$   
(C)  $\sqrt{3}r^2$                       (D) None of these

- Q.27) In the given diagram O is the centre of the circle and CD is a tangent,  $\angle CAB$  and  $\angle ACD$  are supplementary to each other  $\angle OAC = 30^\circ$ . Find the value of  $\angle OCB$  :



- (A)  $30^\circ$                       (B)  $20^\circ$   
(C)  $60^\circ$                       (D) None of these

- Q.28) In the given figure 'O' is the centre of the circle SP and TP are the two tangents at S and T respectively.  $\angle SPT$  is  $50^\circ$ , the value of  $\angle SQT$  is :

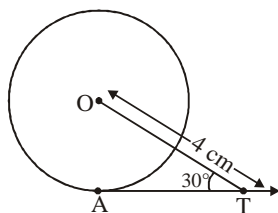


- (A)  $125^\circ$                       (B)  $65^\circ$   
(C)  $115^\circ$                       (D) None of these

- Q.29) Let ABCD be a square of side length 1, and a circle passing through B and C, and touching AD. The radius of circle is

- (A)  $\frac{3}{8}$                               (B)  $\frac{1}{2}$   
(C)  $\frac{1}{\sqrt{2}}$                           (D)  $\frac{5}{8}$

- Q.30) In figure, AT is a tangent to the circle with centre O such that  $OT = 4$  cm and  $\angle OTA = 30^\circ$ . Then AT is equal to



- (A) 4 cm                              (B) 2 cm  
(C)  $2\sqrt{3}$  cm                      (D)  $4\sqrt{3}$  cm

**Answer Sheet**

Q.1	D	Q.11	A	Q.21	B
Q.2	B	Q.12	A	Q.22	A
Q.3	A	Q.13	C	Q.23	A
Q.4	A	Q.14	B	Q.24	D
Q.5	A	Q.15	D	Q.25	A
Q.6	D	Q.16	C	Q.26	C
Q.7	A	Q.17	C	Q.27	A
Q.8	C	Q.18	D	Q.28	C
Q.9	A	Q.19	C	Q.29	D
Q.10	B	Q.20	B	Q.30	C

