SIMPLE CIRCLE AND TANGENT

1. Two equal circles of radius 4 cm intersect each other such that each passes through the centre of the other. The length of the common chord is
   (a) $2\sqrt{3}$ cm (b) $4\sqrt{3}$ cm (c) $2\sqrt{2}$ cm (d) 8 cm

2. The length of the chord of a circle is 8 cm and perpendicular distance between centre and the chord is 3 cm. Then the radius of the circle is equal to :
   (a) 4 cm (b) 5 cm (c) 6 cm (d) 8 cm

3. The length of a chord of a circle is equal to the radius of the circle. The angle which this chord subtends in the major segment of the circle is equal to
   (a) 30º (b)45º (c)60º (d) 90º

4. AB=8 cm and CD=6 cm are two parallel chords on the same side of the centre of a circle. The distance between them is 1 cm. The radius of the circle is
   (a) 5 cm (b) 4 cm (c) 3 cm (d) 2 cm

5. The length of two chords AB and AC of a circle are 8 cm and 6 cm and $\angle$BAC=90º, then the radius of circle is
   (a) 25cm (b) 20 cm (c) 4 cm (d) 5 cm

6. The distance between two parallel chords of length 8 cm each in a circle of diameter 10 cm is
   (a) 6 cm (b) 7 cm (c) 8 cm (d) 5.5 cm

7. One chord of a circle is known to be 10.1 cm. The radius of this circle must be
   (a) 5 cm (b) greater than 5 cm (c) greater than or equal to 5 cm (d) less than 5 cm

8. Chords AB and CD of a circle intersect externally at P. If AB=6 cm, CD=3 cm and PD=5 cm, then the length of PB is
   (a) 5 cm (b) 6.25 cm (c) 6 cm (d) 4 cm

9. Two parallel chords are drawn in a circle of diameter 30 cm. The length of one chord is 24 cm and the distance between the two chords is 21 cm. The length of the other chord is
   (a) 10 cm (b) 18 cm (c) 12 cm (d) 16 cm

10. AB and CD are two parallel chords on the opposite sides of the centre of the circle. If $\overline{AB}=10$ cm. $\overline{CD}=24$ cm and the radius of the circle is 13 cm, the distance between the chords is
    (a) 17cm (b) 15 cm (c) 16 cm (d) 18 cm

11. A chord of length 8 cm is at a distance 3 cm from the centre of the circle. The length of the radus of the circle is
    (a) $\sqrt{73}$ cm (b) $\sqrt{55}$ cm (c) 5 cm (d) 10cm

12. N is the foot of the perpendicular from a point P of a circle with radius 7 cm, on a diameter AB of the circle. If the length of the chord PB is 12 cm, the distance of the point from N from the point B is
    (a) $6\frac{5}{7}$ cm (b) $12\frac{2}{7}$ cm (c) $3\frac{5}{7}$ cm (d) $10\frac{2}{7}$ cm

13. If a chord of a circle is equal to the radius of the circle, then the angle subtended by the chord at a point on the minor arc is
    (a) 150º (b) 60º (c) 120º (d) 30º

14. A chord 12 cm long is drawn in a circle of diameter 20 cm. The distance of the chord from the centre is
    (a) 8 cm (b) 6 cm (c) 10 cm(d) 16 cm

15. The length of the common chord of two intersecting circles is 24 cm. If the diameters of the circles are 30 cm and 26 cm, then the distance between the centers in cm is
    (a) 13 (b) 14 (c) 15 (d) 16

16. From a point P, two tangents PA and PB are drawn to a circle with centre O. if OP is equal to diameter of the circle, then $\angle$APB is
(a) 45º (b) 90º (c) 30º (d) 60º

17. The radii of two concentric circles are 13 cm and 8 cm. AB is a diameter of the bigger circle and BD is a tangent to the smaller circle touching it at D and the bigger circle at E. point A is joined to D. The length of AD is
(a) 20 cm (b) 19 cm (c) 18 cm (d) 17 cm

18. The length of the tangent drawn to a circle of radius 4 cm from a point 5 cm away from the centre of the circle is
(a) 3 cm (b) $4\sqrt{2}$ cm (c) $5\sqrt{2}$ cm (d)$3\sqrt{2}$ cm

19. Two circles touch each other externally at point A and PQ is a direct common tangent which touches the circles at P and Q respectively. Then $\angle$PAQ=
(a)45° (b) 90° (c) 80° (d) 100°

20. PR is tangent to a circle, with centre O and radius 4 cm, at point Q. If $\angle$POR= 90°, OR=5 cm and OP $= \dfrac{20}{3}$ cm, then, in cm, the length of PR is:
(a) 3 (b) $\dfrac{16}{3}$ (c) $\dfrac{23}{3}$ (d) $\dfrac{25}{3}$

21. The tangents at two points at two points A and B on the circle with centre O intersect at P; if in quadrilateral PAOB, $\angle$AOB; $\angle$APB=5:1, then measure of $\angle$APB is
(a) 30º (b) 60º (c) 45º (d) 15º

22. The radii of two circles are 5 cm and 3 cm, the distance between their centers is 24 cm. Then the length of the transverse common tangents is
(a) 16 cm (b) $15\sqrt{2}$ cm (c) $16\sqrt{2}$ cm (d) 15 cm

23. c_1 and c_2 are two concentric circles with centers at O. Their radii are 12 cm. And 3 cm. Respectively. B and C are the points of contact of two tangents drawn to c_2 from a point A lying on the circle c_1. Then the area of the quadrilateral ABOC is
(a) $\dfrac{9\sqrt{15}}{2}$ sq. cm (b) $12\sqrt{15}$ sq. cm (c) $9\sqrt{15}$ sq. cm (d) $6\sqrt{15}$ sq. cm

24. P and Q are two points on a circle with centre at O. R is a point on the minor arc of the circle, beteen the points P and Q. The tangents to the circle at the points P andQ meet each other at the point S. If $\angle$PSQ=20º $\angle$PRQ =?
(a) 80º (b) 200º (c) 160º (d) 100º

25. Two circles intersect at A and B. P is a point on produced BA. PT and PQ are tangents to the circles. The relation of PT and PQ is
(a) PT=2PQ (b)PT<PQ (c) PT>PQ (d)PT=PQ

26. The circumcentre of a triangle ABC is O. If $\angle BAC = 85°$ and $\angle BCA = 75°$, then the value of $\angle OAC$ is
(a) 40º (b)60º (c) 70º (d) 90º

27. O is the incentre of $\triangle ABC$ and $\angle A = 30°$, then $\angle BOC$ is
(a) 100º (b)105º (c) 110º (d) 90º

28. Let O be the in-centre of a triangle ABC and D be a point on the side BC of $\triangle ABC$, such that OD$\perp$BC. If $\angle BOD = 15°$, then $\angle ABC =$
(a) 75º (b)45º (c) 150º (d) 90º

29. I is the incentre of $\triangle ABC, \angle ABC = 60°$ and $\angle ACD = 50°$. Then $\angle$ BIC is:
(a) 55º (b)125º (c) 70º (d) 65º

30. If the incentre of an equilateral triangle lies inside the triangle and its radius is 3 cm, then the side of equilateral triangle is
    (a) $9\sqrt{3}$ cm　　(b) $6\sqrt{3}$ cm　(c) $3\sqrt{3}$ cm　　(d) 6 cm

31. I is the incentre of a triangle ABC. If $\angle ABC = 65°$ and $\angle ACB = 55°$, then the value of $\angle BIC$ is
    (a) 130º　(b)120º (c) 140º (d) 110º

32. I a triangle ABC, incentre is O and $\angle BOC = 110°$, then the measure of $\angle BAC$ is:
    (a) 20º　(b)40º (c) 55º (d) 110º

33. The equidistant point from the vertices of a triangle is called its:
    (a) Centroid　　　　(b)Incentre　(c)Circucentere　　　(d)Orthocentre

34. If in a triangle, the circumcentre, incentre, centroid and orthocenter coincide, then the triangle is
    (a) Acute angled　　　(b)Isosceles　(c)Right angled　　(d)Equilateral

35. The length of radius of a circumcircle of a triangle having sides 3cm, 4cm and 5cm is:
    (a) 2 cm (b)2.5cm (c) 3 cm (d) 1.5 cm

36. I and O are respectively the in-centre and circumcentre of a triangle ABC. The line AI produced intersects the circumcircle of $\triangle$ABC at the point D. If $\angle ABC = x°, \angle BID = y°$ and $\angle BOD = z°$, then

    $\dfrac{z+x}{y} =$

    (a) 3　　(b)1　(c)2　(d) 4

37. If the $\triangle ABC$ is right angled at B. Find its circumradius if the sides AB and BC are 15 cm and 20 cm respectively.
    (a) 25 cm　(b)20 cm　(c)15 cm　(d)12.5 cm

38. If the circumradius of an equilateral triangle ABC be 8 cm then the height of the triangle is
    (a) 16 cm　(b) 6 cm　(c) 8 cm　(d) 12 cm

39. Triangle PQR circumscribes a circle with centre O and radius r cm such that $\angle PQR = 90°$. If PQ = 3 cm, QR= 4cm. then the value of r is :
    (a)2　　(b) 1.5　　(c) 2.5　　(d) 1

40. The radius of two concentric circles are 17cm and 10cm. A straight line ABCD intersects the larger circle at the point A and D and intersects the smaller circle at the points B and C . If BC=12 cm, then the length of AD (in cm) is:
    (a) 20　　(b) 24 (c) 30 (d)34

41. P and Q are centres of two circles with radii 9 cm and 2 cm respectively, where PQ=17 cm. R is the centre of another circle of radius x cm, which touches each of the above two circles externally. If $\angle PRQ = 90°$, then the value of x is
    (a) 4 cm　(b) 6 cm　　(c) 7 cm　　(d)8 cm

42. ABCD is a cyclic trapezium such that $AD\|BC$, if $\angle ABC = 70°$, then the value of $\angle BCD$ is
    (a) 60º　(b)70º (c) 40º (d) 80º

43. If an exterior angle of a cycle quardrilateral be 50º , then the interior opposite angle is:
    (a) 130º　(b)40º (c) 50º (d) 90º

44. ABCD is a cyclic trapezium whose sides AD and BC are parallel to each other. If $\angle ABC = 72°$, then the measure of the $\angle BCD$ is:
    (a) 162º　(b)18º (c) 108º (d) 72º

45. A cyclic quadrilateral ABCD is such that AB=BC,AD=DC, AC⊥BD, $\angle CAD = \theta$. Then the angle $\angle ABC =$

    (a) θ　　(b) $\dfrac{\theta}{2}$　(c) 2θ　　　　(d)3θ