

BHARATH COACHING CENTRE

10th CBSE

Area Related to Circle

Total: 50

Maths

SA – 2

Time: 1.30 hrs

SECTION – A

5 x 1 = 5

1. Area of a quadrant of a circle, whose circumference is 22cm, is $\left(\pi = \frac{22}{7}\right)$.
2. The diameter of a circle whose area is equal to the sum of the areas of the two circles of radii 40cm and 9 cm is:
3. The area of the largest triangle that can be inscribed in a semicircle, whose radius is r, is
4. The area of a sector with radius 'r' and arc length 'l' is
5. In a circle of diameter 42 cm, if an arc subtends an angle of 60° at the centre where $\left(\pi = \frac{22}{7}\right)$, then length of arc is

SECTION – B

5 x 2 = 10

6. A bicycle wheel of radius 35cm is making 25 revolutions in 10 seconds. At what speed in km/h is the bicycle moving?
7. If the perimeter of a protractor is 72 cm, calculate its area. $\left(\pi = \frac{22}{7}\right)$
8. A chord of a circle of radius 14cm subtends an angle of 60° at the centre. Find the area of the corresponding minor segment. $\left(\pi = \frac{22}{7}, \sqrt{3} = 1.73\right)$
9. Find the area of a right angled triangle, if the radius of its circumcircle is 3 cm and altitude drawn to the hypotenuse is 2 cm.
10. For each corner of a square of side 4cm, a quadrant of a circle of radius 1cm is cut and also a circle of diameter 2cm is cut as shown in fig. Find the area of the remaining portion of the square. $(\pi = 3.14)$

SECTION – C

5 x 3 = 15

11. A wire when bent in the form of a square encloses an area 121 sq. cm. if the wire were bent in the form of a circle, find the area enclosed by the circle $\left(\pi = \frac{22}{7}\right)$.
12. A bicycle wheel makes 75 revolutions per minute to maintain a speed of 8.91 km/hr. find the diameter of the wheel.
13. A chord AB of a circle of radius 15cm subtends an angle of 60° at the centre of the circle. Find the areas of the major and minor segments. $\left(\pi = \frac{22}{7}, \sqrt{3} = 1.73\right)$
14. In the given figure, find the area of the region, where a circular arc of radius 6 cm is drawn with a vertex O of an equilateral triangle OAB of side 12cm as centre.
15. Find the area of the shaded region in the given fig, if BC = BD = 8cm, AC = AD = 15cm and O is the centre of the circle. $(\pi = 3.14)$

SECTION – D

5 x 4 = 20

16. A race track is in the form of a ring whose inner and outer circumferences are 437 m and 503 m respectively. Find the width of the track and also its area $\left(\pi = \frac{22}{7}\right)$.

17. In a circle of radius 6 cm, a chord AB of length 10cm makes an angle of 110° at the centre O of the circle ($\pi = \frac{22}{7}$). Find:
- Circumference of the circle
 - The area of the circle
 - The length of the arc
 - The area of the sector AOB
18. The area of an equilateral triangle ABC is 17320.5 cm^2 . With each vertex of the triangle as centre, a circle is drawn with radius equal to half the length of the side of the triangle (see Fig). Find the area of the shaded region. (Use $\pi = 3.14$ and $\sqrt{3} = 1.73205$)
19. Find the area of the segment AYB shown in Fig. 12.9, if radius of the circle is 21 cm and $\angle AOB = 120^\circ$.
20. In Given Fig, ABC is a right - angled triangle, $\angle B = 90^\circ$, AB = 28 cm and BC = 21 cm. with AC as diameter, a semi-circle is drawn and with BC as radius a quarter circle is drawn. Find the area of the shaded region.

