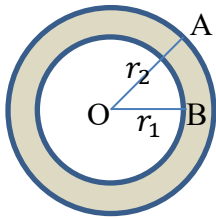## AREAS RELATED TO CIRCLES — CM101101

Very Short Answer Type Questions :   **1 mark each**

1. If the diameter of a semicircular protractor is 14 cm, then the perimeter of the protractor is:

(a) 26 cm   (b) 14 cm   (c) 28 cm   (d) 36 cm

2. In the figure, area of shaded region is:

(a) $\pi(r_1 + r_2)$ (b) $\pi(r_1^2 + r_2^2)$ (c) $\pi(r_1 - r_2)$ (b) $\pi(r_2^2 - r_1^2)$

3. The area of a sector of central angle x° of a circle with radius 4r is:

(a) $\frac{4\pi x}{360^o}$ (b) $\frac{2\pi x r^2}{45^o}$ (c) $\frac{\pi r^2 x}{360^o}$ (d) $\frac{2\pi r x}{360^o}$

4. The minute hand of a clock is 21 cm long. The distance moved by the tip of the minute hand in 1 hour is:

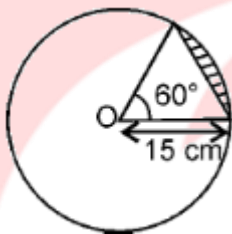(a) 21π cm   (b) 42π cm   (c) 10.5π cm   (d) 7π cm

5. A wire is in the shape of a circle of radius 21 cm. It is bent to form a square. The side of the square

is $\left[\pi = \frac{22}{7}\right]$:

(a) 22 cm   (b) 33 cm   (c) 44 cm   (d) 66 cm

Short Answer Type Questions :   **2 marks each**

6. Find the area of the shaded portions of the following figure with given measurements :

7. OABC is a rhombus whose three vertices A, B and C lie on a circle with centre O. If the radius of the circle

is 10 cm, find the area of the rhombus.

8. The wheels of a car are of diameter 80 cm each. How many complete revolutions does each wheel make

in 10 minutes when the car is travelling at the speed of 66 km/hour ?

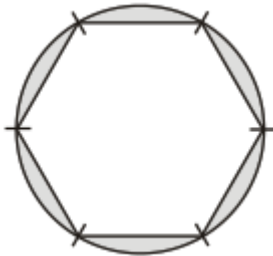**Long Answer Type Questions :**   **3 marks each**

9. The radii of two circles are 4 cm and 3 cm. Find the radius of the circle whose area is equal to the sum of

the areas of the two circles. Also find the circumference of this circle.

10. In a circle of radius 12 cm, an arc subtends an angle of 60° at the centre. Find

(i) Area of sector formed by the arc

(ii) Area of the segment formed by the corresponding chord.

11. A round table cover has six equal designs as shown in figure. If the radius of the cover is 28 cm, find the cost of making the designs at the rate of Rs 0.35 per cm^2.

Very Long Answer Type Questions :   **4 marks each**

12. Find the difference between the area of a regular hexagonal plot each of whose side is 72 m and the area of the circular swimming tank inscribed in it. $\left(\text{Use } \pi = \frac{22}{7}\right)$.

13. The area of an equilateral triangle ABC is 17320.5 cm². 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. Find the area of the shaded region. $\left(\text{Use } \pi = 3.14 \text{ and } \sqrt{3} = 1.73205\right)$.