Level - 1

MCQ Type Questions (1 mark each):

1. If the area of a semi-circular field is 15400 sq. m, then perimeter of the field is

   Ⓐ $160\sqrt{2}$ m Ⓑ $260\sqrt{2}$ m Ⓒ $360\sqrt{2}$ m Ⓓ $460\sqrt{2}$ m

   [**Hints:** Area of semicircle $=\frac{1}{2}\pi r^2$ and perimeter= $\pi r + 2r$]

2. A race track is in the form of a ring whose inner and outer circumference are 437 m and 503 m respectively. The area of the track is

   Ⓐ 66 sq. cm Ⓑ 4935 sq. cm. Ⓒ 9870 sq. cm Ⓓ None

   [**Hints:** Find R and r. Area of the track = $\pi(R^2 - r^2)$]

3. If the circumference of a circle increase from 4π units to 8π units, then its area is

   Ⓐ halved Ⓑ doubled Ⓒ tripled Ⓓ quadrupled

4. If the perimeter of a semi-circular protractor is 36 cm, then its diameter is

   Ⓐ 10 cm Ⓑ 12 cm Ⓒ 14 cm Ⓓ 16 cm

   [**Hints:** Perimeter = $\pi r + 2r$]

5. If the sector of a circle of diameter 12 cm subtends an angle of 120° at the centre, then the length of the arc (in cm) of the sector is

   Ⓐ 2π Ⓑ 3π Ⓒ 4π Ⓓ 5π

   [**Hints:** Length of arc $=\frac{\theta}{360°}\times 2\pi r$]

6. Area of a sector of angle θ (in degrees) of a circle with radius r is

   Ⓐ $\frac{\theta}{360°}2\pi r$ Ⓑ $\frac{\theta}{180°}\pi r^2$ Ⓒ $\frac{\theta}{360°}\pi r^2$ Ⓓ $\frac{\theta}{180°}\pi r$

7. The number of revolutions made by a circular wheel of radius 0.7 m in rolling a distance of 176 m is

   Ⓐ 22 Ⓑ 24 Ⓒ 75 Ⓓ 40

   [**Hints:** No. of revolutions $=\frac{\text{Distance}}{2\pi r}$]

8. If the area of a circle is 154 cm^2, then its circumference is

   Ⓐ 11 cm Ⓑ 22 cm Ⓒ 44 cm Ⓓ 55 cm

   [**Hints:** Find r]

9. It is proposed to build a single circular park equal in area to the sum of areas of two circular parks of diameters 16 m and 12 m in a locality. The radius of the new park would be

   Ⓐ 10 m Ⓑ 15 m Ⓒ 20 m Ⓓ 24 m

   [**Hints:** $R^2 = r_1^2 + r_2^2$]

10. If the sum of the areas of two circles with radii R_1 and R_2 is equal to the area of a circle of radius R, then

Ⓐ $R_1 + R_2 = R$ Ⓑ $R_1^2 + R_2^2 = R^2$ Ⓒ $R_1 + R_2 < R$ Ⓓ $R_1^2 + R_2^2 < R^2$

SA-I Type:

11. A bucket is raised from a well by means of a rope which is wound round a wheel of diameter 77 cm. Given that the bucket ascends in 1 minute 28 seconds with a uniform speed of 1.1 m/s. Calculate the number of complete revolutions the wheel makes in raising the bucket.

[**Hints:** No. of revolutions $= \dfrac{\text{Distance}}{2\pi r}$]
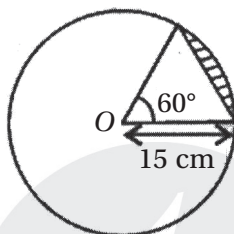
12. A chord of a circle of radius 28 cm subtends an angle 90° at the centre of the circle. Find the area of the minor segment.

[**Hints:** Area of segment = area of sector- area of triangle]

13. The perimeter of a sector of a circle with central angle 90° is 25 cm. Find the area of the minor segment of the circle.

[**Hints:** Perimeter $= \dfrac{\pi r}{2} + 2r$]

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

[**Hints:** Area of segment = area of sector – area of triangle]

15. The diameter of a circular pond is 17.5 m. It is surrounded by a path of width 3.5 m. Find the area of the path.

[**Hints:** Area of path $= \pi(R^2 - r^2)$]

A N S W E R

1. Ⓒ	4. Ⓒ	7. Ⓓ	10. Ⓑ	13. 14 cm²
2. Ⓑ	5. Ⓒ	8. Ⓒ	11. 40	14. 20.43 cm²
3. Ⓓ	6. Ⓒ	9. Ⓐ	12. 224 cm²	15. 231 m²