



CBSE NCERT Based Chapter wise Questions (2025-2026)

Class-X

Subject: Mathematics

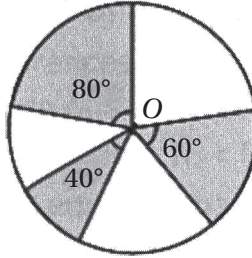
Chapter Name : *Area Related to Circles* (Chapter : 11)

Total : 4 Marks (expected) [MCQ(1+1)-1 Mark, SA(1)-2 Marks]

Level - 2(Higher Order)

MCQ Type Questions

1. In the given figure, three sectors of a circle of radius 7 cm, making angles of 60° , 80° and 40° at the centre are shaded. The area of the shaded region (in cm^2) is [Use $\pi = \frac{22}{7}$]



- (A) 77 (B) 154 (C) 44 (D) 22

[Hints: Area of shaded region = $\frac{\theta}{360^\circ} \times \pi r^2$]

2. The ratio of the areas of the incircle and circumcircle of a square is

- (A) 1 : 2 (B) 1 : 3 (C) 1 : 4 (D) 1 : 2

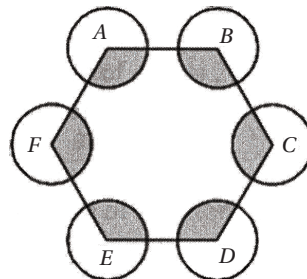
[Hints: Ratio = $\pi \left(\frac{a}{2}\right)^2 : \pi \left(\frac{a}{\sqrt{2}}\right)^2$ where a = length of side of square]

3. A circular wire of radius 42 cm is cut and bent into the form of a rectangle whose sides are in the ratio of 6 : 5. The smaller side of the rectangle is

- (A) 30 cm (B) 60 cm (C) 70 cm (D) 80 cm

[Hints: Perimeter of circle = perimeter of rectangle]

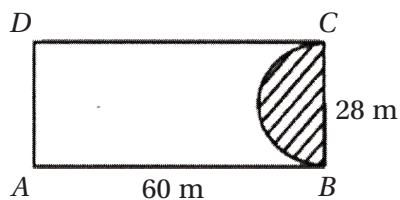
4. $ABCDEF$ is any hexagon with different vertices A, B, C, D, E and F as the centres of circles with same radius r are drawn. The area of the shaded portion is



- (A) πr^2 (B) $2\pi r^2$ (C) $3\pi r^2$ (D) $4\pi r^2$

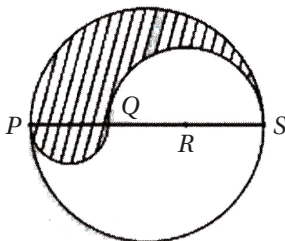
[Hints: Area of shaded region = $\frac{\theta}{360^\circ} \times \pi r^2$]

13. A plot is in the form of a rectangle $ABCD$ having semicircle on BC as shown in the figure. The semicircle portion is grassy while the remaining plot is without grass. Find the area of the plot without grass where $AB = 60$ m and $BC = 28$ m.



[Hints: Area = area of rectangle - area of semi-circle]

14. $PQRS$ is a diameter of a circle of radius 6 cm. The lengths PQ , QR and RS are equal. Semi-circles are drawn on PQ and QS as diameters. Find the perimeter of the shaded region.



[Hints: Perimeter = $\pi(r_1 + r_2 + r_3)$]

15. $OABC$ 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.

[Hints: Area of rhombus = $2 \times$ area of equilateral triangle of side 10 cm.]

ANSWER

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|--------|--------|--------|--------------------------|-------------------------------|
| 1. (A) | 4. (B) | 7. (A) | 10. (A) | 13. 1372 m^2 |
| 2. (A) | 5. (C) | 8. (B) | 11. 577.5 cm^2 | 14. $12\pi \text{ cm}$ |
| 3. (B) | 6. (A) | 9. (C) | 12. 4746 m^2 | 15. $50\sqrt{3} \text{ cm}^2$ |