Mathematics

Practice Test Paper 5

(Chapter 11: Areas Related to Circles)

Class X | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. The paper has four sections: A, B, C and D.
2. Section A - 5 marks; Section B - 8 marks; Section C - 9 marks; Section D - 3 marks.
3. Choose one correct option in Section A. Show the necessary steps and reasoning in Sections B, C and D.
4. Use $\pi = 22/7$ unless stated otherwise. Use of calculators is not allowed.

SECTION A

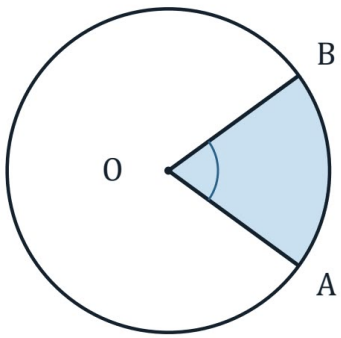
(5 questions × 1 mark = 5 marks)

1. A quadrant has what percentage of the area of its full circle?

(A) 25% (B) 50%

(C) 75% (D) 90%

2. The sector shown has radius 10 cm and angle 72°. Using $\pi = 3.14$, its area is:



(A) 62.8 cm^2

(B) 31.4 cm^2

(C) 125.6 cm^2

(D) 78.5 cm^2

3. Which must be added to the area of a minor segment to obtain the corresponding minor sector area?

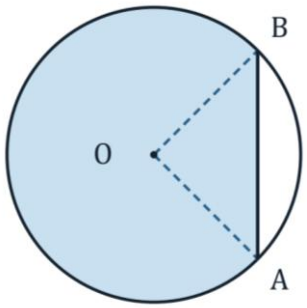
(A) major segment area

(B) area of the triangle formed by the chord and radii

(C) circle area

(D) semicircle area

4. The circle has area S and its unshaded minor segment has area M. The shaded major segment has area:



(A) S + M (B) M − S
(C) S − M (D) S ÷ M

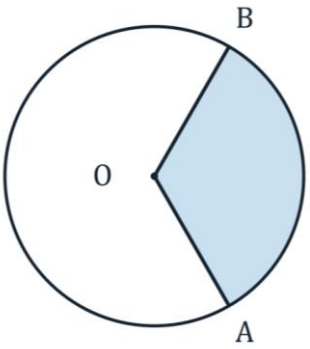
5. If a sector's angle is halved while its radius is unchanged, its area is:

(A) unchanged (B) doubled
(C) halved (D) quartered

SECTION B

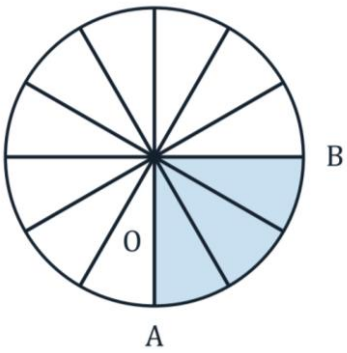
(4 questions × 2 marks = 8 marks)

6. Sector OAB has radius 6.3 cm and complete perimeter 25.8 cm. Find its area.



7. The area of a 40° sector is 22 cm^2. Find the area of the full circle and the complementary major sector.

8. A circular emblem of radius 21 cm has twelve equal sectors. Find the area of the three adjacent shaded sectors and their total outer arc length.



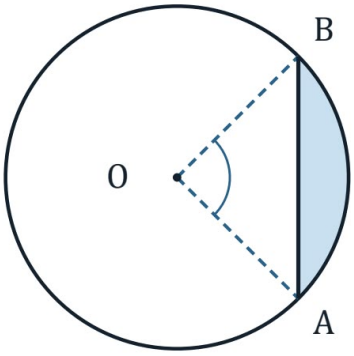
9. A sector has area 24π cm^2 and arc length 8π cm. Find its radius and central angle.

SECTION C

(3 questions × 3 marks = 9 marks)

10. A lighthouse warns ships by illuminating a sector of angle 80° up to a distance of 16.5 km. Find the warned area and the length of its outer arc. Use π = 3.14; round the arc length to two decimal places.

11. A chord of a circle of radius 7 cm subtends 90° at O. Find the area and perimeter of the shaded minor segment.

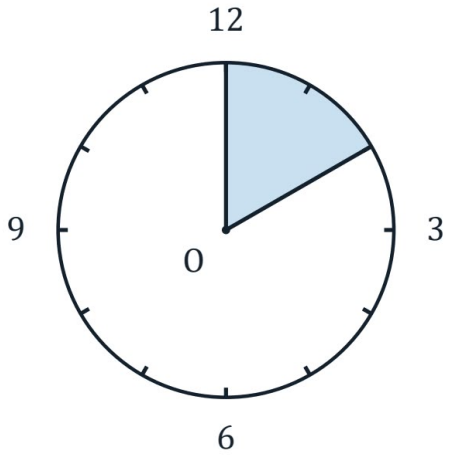


12. A circular table cover of radius 28 cm contains an inscribed regular hexagon. The six segments outside it are decorated at ₹0.35 per cm^2. Find the decoration cost. Use $\sqrt{3}$ = 1.7.

SECTION D

(Application Based Question - 3 marks)

13. A clock's minute hand is 12 cm long. The shaded sector is the region swept from 12:00 to 12:10. Use π = 3.14.



(i) Find the swept angle.

(ii) Find the swept area.

(iii) Find the distance travelled by the tip.