Mathematics — Ganita Manjari

Chapter 6 Test 7

Measuring Space: Perimeter and Area

Class IX | 2026–27

Time Allowed: 45 Minutes | Maximum Marks: 25

General Instructions

1. All 13 questions are compulsory. Choose one option in A; show working in B–D.
2. No calculators. Leave π and square roots exact unless directed otherwise.
3. Figures are schematic. Use the stated dimensions and show your working.

SECTION A

(5 questions × 1 mark = 5 marks)

1. A 360° sector is the same region as:

(A) A semicircle
(B) The whole disc
(C) A chord
(D) A quadrant

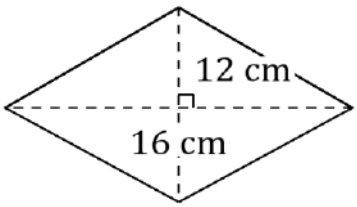
2. When very thin circle sectors are rearranged into a parallelogram-like shape, its limiting base is:

(A) $2\pi r$
(B) r
(C) πr
(D) πr^2

3. To find a parallelogram's area, multiply a base by:

(A) Its perpendicular height
(B) Any adjacent side
(C) Its diagonal
(D) Its perimeter

4. The rhombus has diagonals 12 cm and 16 cm. Find its perimeter.



(A) 28 cm
(B) 56 cm
(C) 48 cm
(D) 40 cm

5. Which expression has the dimensions of area when r and l are lengths?

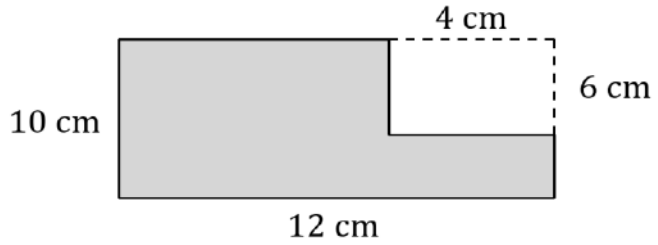
(A) $r + l$
(B) rl
(C) r/l
(D) $2\pi r$

SECTION B

(4 questions × 2 marks = 8 marks)

6. A half-ring has outer radius 6 cm and inner radius 4 cm. Find its complete perimeter, including the two straight end pieces.

7. A 4 cm by 6 cm corner is removed from a 12 cm by 10 cm rectangle. Find the area and perimeter of the L-shaped remainder.



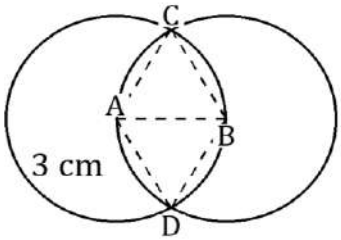
8. Two sides of a triangle are 8 cm and 11 cm; its perimeter is 32 cm. Find its exact area.

9. An isosceles triangle has base 16 cm and area 96 cm^2. Find its equal sides and exact perimeter.

SECTION C

(3 questions × 3 marks = 9 marks)

10. Two circles of radius 3 cm pass through each other's centres. Find the outer perimeter of their union, excluding the interior arcs.



11. Explain how two congruent trapezia of height h and parallel sides a and b give the area formula for one trapezium.

12. Join the midpoints of the four sides of a rectangle of dimensions a by b. Show that the resulting quadrilateral has half the rectangle's area.

SECTION D

(1 application question × 3 marks = 3 marks)

13. Four separate circular holes of radius 2 cm are cut from a 24 cm by 10 cm metal sheet. Find the remaining area and the total boundary length of the remaining metal.