Mathematics — Ganita Manjari

Chapter 5 Test 1

I'm Up and Down, and Round and Round

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. Give exact lengths and reasons for angle calculations.
3. Figures are schematic. Use the stated dimensions and show your working.

SECTION A

(5 questions × 1 mark = 5 marks)

1. A circle is the set of points in a plane at:

(A) A fixed distance from a fixed point

(B) Any distance from a fixed point

(C) A fixed distance from a line

(D) Distances less than a fixed radius

2. A chord passing through the centre of a circle is called a:

(A) Radius (B) Minor arc

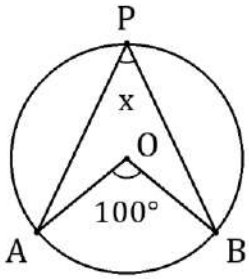
(C) Diameter (D) Circumcentre

3. AB is a non-diameter chord of a circle with centre O. Triangle OAB must be:

(A) Equilateral (B) Isosceles

(C) Right-angled (D) Scalene

4. O is the centre. Find x, the angle APB.



(A) 100° (B) 80°

(C) 25° (D) 50°

5. The centres of all circles through two distinct points A and B lie on:

(A) Line AB (B) The perpendicular bisector of AB

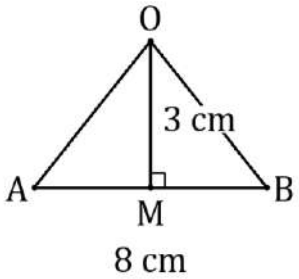
(C) A circle with centre A (D) The ray AB

SECTION B

(4 questions × 2 marks = 8 marks)

6. A chord is 5 cm from the centre of a circle of radius 13 cm. Find its length.

7. AB = 8 cm, M is its midpoint and OM = 3 cm. OM is perpendicular to AB. Find the radius of the circle through A and B with centre O.



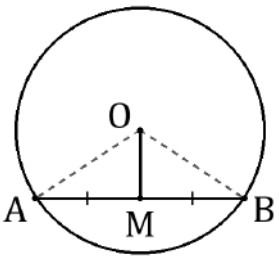
8. In a circle with centre O, ∠OAB = 32°. Find the smaller and reflex angles AOB.

9. Two circles pass through the same three distinct non-collinear points. Explain why the circles must coincide.

SECTION C

(3 questions × 3 marks = 9 marks)

10. O is the centre and M is the midpoint of the non-diameter chord AB. Prove that OM is perpendicular to AB.



11. In cyclic quadrilateral PQRS, ∠P = (2x + 10)° and ∠R = (3x − 20)°. Find x and both angles.

12. Describe how to construct triangle ABC with AB = 5 cm, ∠A = 70° and ∠B = 60°, and then its circumcircle. State where the centre lies.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A circular window has diameter 50 cm. A straight bar of length 40 cm joins two points on its rim. How far is the bar from the centre? Explain why there are two parallel positions for this bar.