Mathematics — Ganita Manjari

Chapter 5 Test 2

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. The circumcentre of an obtuse-angled triangle lies:

(A) Inside it
(B) Outside it
(C) At its obtuse vertex
(D) At every side midpoint

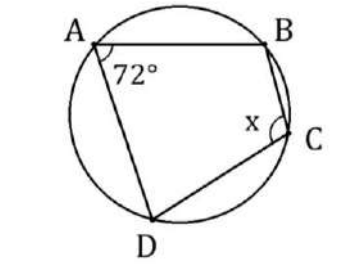
2. How many circles pass through three distinct collinear points?

(A) One
(B) Two
(C) Infinitely many
(D) None

3. A circle coincides with itself when rotated about its centre through:

(A) Any angle
(B) Only 90°
(C) Only 180°
(D) Only multiples of 60°

4. ABCD is cyclic. Find x.



(A) 72°
(B) 108°
(C) 180°
(D) 36°

5. The distance of a chord from the centre means the length of:

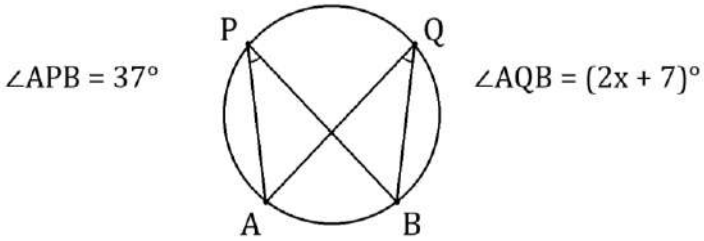
(A) Any radius
(B) The whole chord
(C) The perpendicular to the chord
(D) A line to a chord endpoint

SECTION B

(4 questions × 2 marks = 8 marks)

6. A student draws a 16 cm chord in a circle of radius 10 cm and labels its distance from the centre as 7 cm. Can this diagram be correct? Justify.

7. P and Q lie on the same side of chord AB. All four points are on the circle. If ∠APB = 37° and ∠AQB = (2x + 7)°, find x.



8. Two circles have radii 3 cm and 5 cm. In each circle, a chord subtends 60° at the centre. Are the chords equal? Explain.

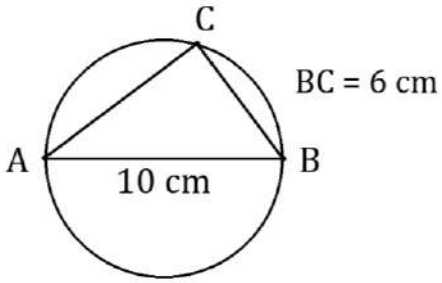
9. A and B are 12 cm apart. How many circles through both points have radius (i) 5 cm, (ii) 6 cm, (iii) 10 cm?

SECTION C

(3 questions × 3 marks = 9 marks)

10. Prove that equal chords of a circle are equidistant from its centre.

11. AB is a diameter of length 10 cm and BC = 6 cm. Find AC and the area of triangle ABC.



12. The angles A, B, C and D of a cyclic quadrilateral are in the ratio 2:3:4:3. Find all four angles and verify both opposite pairs.

SECTION D

(1 application question × 3 marks = 3 marks)

13. A broken circular plate still has three marked points A, B and C on its curved rim. Describe a ruler-and-compass method to recover its centre and radius, and justify it.