1. Two equal chords AB and CD of a circle are drawn. If ∠AOB = 60°, what is ∠COD?
   A. 90° B. 45°
   C. 60° D. 30° (C)

Explanation : Equal chords subtend equal angles at the centre. So, ∠COD = ∠AOB = 60°.

2. In a circle, OM ⊥ chord AB and intersects it at M. If AB = 10 cm, what is the length of AM?
   A. 2 cm B. 5 cm
   C. 10 cm D. 6 cm (B)

Explanation : The perpendicular from the centre bisects the chord. Hence, AM = AB/2 = 5 cm.

3. A chord of a circle is 8 cm long and its distance from the centre is 3 cm. What will be the length of a second chord equal to it in length and position?
   A. 5 cm from the centre
   B. 3 cm from the centre
   C. 6 cm from the centre
   D. Can't be determined (B)

Explanation : Equal chords are equidistant from the centre. So the second chord will also be 3 cm away.

4. ∠POQ = 100°, where arc PQ subtends this angle at the centre. What is ∠PAQ at a point A on the circle?
   A. 50° B. 100°
   C. 25° D. 75° (A)

Explanation : Angle at the centre is twice the angle at the circle. So ∠PAQ = ½ × ∠POQ = 50°.

5. In a cyclic quadrilateral, if one angle is 110°, what is the measure of its opposite angle?
   A. 110° B. 70°
   C. 90° D. 60° (B)

Explanation : Opposite angles of a cyclic quadrilateral add up to 180°. So, 180° – 110° = 70°.

6. A chord of a circle equals its radius. What is the angle it subtends at the centre?
   A. 90° B. 60°
   C. 120° D. 45° (B)

Explanation : In an equilateral triangle (when chord = radius), each angle = 60°.

7. In a circle, AB and CD are chords intersecting at point E. If AE = 3 cm, EB = 2 cm, and CE = 2 cm, what is the length of ED so that the chords are equal?
   A. 3 cm B. 2 cm
   C. 5 cm D. 1 cm (A)

Explanation : AE × EB = CE × ED ⟹ 3×2 = 2×ED ⟹ ED = 3 cm.

8. A diameter makes equal angles with two intersecting chords AB and CD at point E. What can be concluded?
   A. AB = CD
   B. Chords are perpendicular
   C. E lies on centre
   D. Circles are congruent (A)

Explanation : If intersecting chords make equal angles with a diameter, the chords are equal (Example 1 in the PDF).

9. If two arcs are congruent, which of the following must also be true?
   A. The radii are different
   B. Their chords are unequal
   C. Their chords are equal
   D. One is a major arc, the other minor (C)

Explanation : Congruent arcs have equal chords (page 122).

10. If ∠BAC = 45° and ∠CAD = 55°, and ABCD is a cyclic quadrilateral, what is ∠BCD?
    A. 80° B. 100°
    C. 135° D. 90° (A)

Explanation : ∠DAB = 45° + 55° = 100°, so ∠BCD = 180° – 100° = 80°.