B.K. BIRLA CENTRE FOR EDUCATION

SARALA BIRLA GROUP OF SCHOOLS
A CBSE DAY-CUM-BOYS' RESIDENTIAL SCHOOL

POST MID TERM- EXAM (2026)
MATHEMATICS

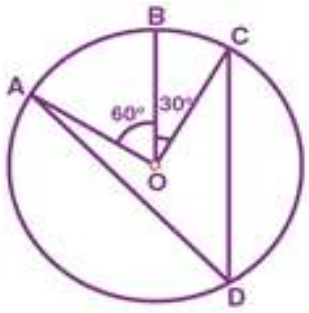
Class : IX **Duration: 1 Hr**
Date : 10-01-2026 **Max. Marks: 25**
Admission No.: **Roll No.:**

General Instructions:

1. All Questions are compulsory.
2. There are 13 questions.

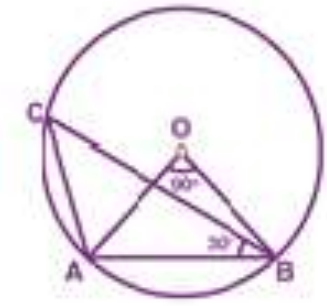
I. **CHOOSE THE CORRECT ALTERNATIVE IN THE FOLLOWING.** **5**

1. In the below figure, the value of ∠ADC is:
   ∠AOB = 60^0 and ∠BOC = 30^0



a) 60° b) 30° c) 45° d) 55°

2. In the given figure, ∠AOB = 90º and ∠ABC = 30º, then ∠CAO is equal to:



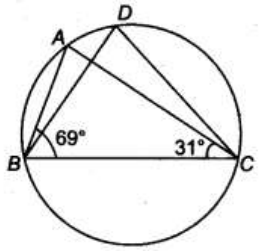
a) 30º b) 45º c) 60º d) 90º

3. The radius of a hemisphere is r. What is its volume?
   a) $\frac{4}{3}\pi r^3$ b) $\frac{2}{3}\pi r^3$ c) $4\pi r^3$ d)) $2\pi r^3$
4. The surface area of a sphere of radius 14 cm is:
   a)1386 sq.cm b) 1400 sq.cm c) 2464 sq.cm d) 2000 sq.cm

5. If slant height of the cone is 21cm and the diameter of the base is 24 cm. The total surface area of a cone is:
   a) 972 cm^2 b) 279 cm^2 c) 792 cm^2 d) None of these

6. Prove that the perpendicular from the centre of a circle to a chord bisects the chord. **2**

7. In the following figure, ∠ABC = 69°, ∠ACB = 31°, find ∠BDC. **2**



8. Curved surface area of a cone is 308 cm^2, and its slant height is 14 cm. Find
   (i) Radius of the base (ii) total surface area of the cone. **2**

9. The radius of a spherical balloon increases from 7cm to 14 cm as air is being pumped into it. Find the ratio of surface areas of the balloon in the two cases. **2**

10. A chord of a circle is equal to the radius of the circle. Find the angle subtended by the chord at a point on the minor arc and also at a point on the major arc. **3**

11. Find the volume of a sphere whose surface area is 154 cm^2. (Assume $\pi = 22/7$) **3**

12. A right triangle ABC with sides 5cm, 12cm and 13cm is revolved about the side 12 cm. Find the volume of the solid so obtained. **3**

13. A Shot - putt is a metallic sphere of radius 4.9 cm. If the density of the metal is 7.8 gm per cu ^{3}, find the mass of the shot – putt. **3**

********** *ALL THE BEST* **********