CLASS TEST
CLASS: IX
CHAPTER 11: SURFACE AREA AND VOLUME
Date: 03-11-2025

MAXIMUM MARKS: 15 **TIME: 40 MINUTES**

A. Choose the correct option: [1 x 3 =3]

1. If the diameter of the base and the height of a cone are 10 cm and 12 cm respectively, then the slant height of the cone is −
(a) 8 cm (b) 13 cm (c) 15 cm (d) 20 cm

2. The diameter of a base of a cone is 12 cm and its height is 20 cm, then its volume is
(a) 240π cm^3 (b) 480π cm^3 (c) 720π cm^3 (d) 960π cm^3

3. If the radius of a sphere is 2r, then its volume will be −
(a) $\frac{4}{3}\pi r^3$ (b) $4\pi r^3$ (c) $\frac{8}{3}\pi r^3$ (d) $\frac{32}{3}\pi r^3$

B. Assertion-Reason Type Questions: [1 x 2=2]

1. Assertion(A): For the same height and radius, the volume of the cylinder is three times the volume of the cone.
Reason (R): Curved Surface area of a cone with radius r units is πrl square unit.

2. Assertion(A): The total surface area of a solid hemisphere of radius 7 cm is 462 cm^2.
Reason (R): The total surface area of a hemisphere of radius r units is $3\pi r^2$ square unit.

C. SAQ: [$3 \times 2 = 6$]

1. The radius and the height of a right circular cone are in the ratio 5: 12. If its volume is 314 cm^3, find its slant height and the curved surface area. (Consider $\pi = 3.14$)

2. The circumference of a hemispherical bowl is 132 cm, find the capacity of the bowl.

D. CASE STUDY [2+2=4]

Mathematics teacher of a school took his 9th standard students to show Gol Gumbaz. It was a part of their Educational trip. The teacher had interest in history as well. She narrated the facts of Gol Gumbaz to the students. Gol Gumbaz is the tomb of king Muhammad Adil Shah, adil Shah Dynasty. Construction of the tomb, located in Vijayapura, Karnataka, India, was started in 1626 and completed in 1656. It reaches up to 51 meters in height while the giant dome has an external diameter of 44 meters, making it one of the largest does ever built. At each of the four corners of the cube is a dome shaped octagonal tower shaped octagonal tower seven stories high with a staircase inside.

(i) What is the height of the cuboidal part? What is the formula of total surface area of a cuboid?
(ii) What is the curved surface area of the hemispherical dome?