

CHAPTER-12 | SURFACE AREAS AND VOLUMES

QUIZ
PART-04

1. A solid cone stands on a hemisphere with radii both equal to 1 cm and height 1 cm. The volume is:

- A. $\frac{2}{3}\pi \text{ cm}^3$ B. $\frac{4}{3}\pi \text{ cm}^3$
C. $\frac{1}{3}\pi \text{ cm}^3$ D. $\frac{5}{3}\pi \text{ cm}^3$ (B)

Explanation: Volume = $\frac{4}{3}\pi r^3$ for both the cone and hemisphere.

2. Rachel made a model with two cones. The volume of air in the model is:

- A. 75 cm^3 B. 85 cm^3
C. 90 cm^3 D. 100 cm^3 (C)

Explanation: Volume = Volume of the cylinder + two cones.

3. Syrup in 45 gulab jamuns (cylinder with two hemispherical ends):

- A. 250 cm^3 B. 300 cm^3
C. 350 cm^3 D. 400 cm^3 (B)

Explanation: Volume of each jamun = 30% syrup. Total syrup in 45 jamuns is 300 cm^3 .

4. A pen stand made of wood has conical depressions. The volume of wood is:

- A. 250 cm^3 B. 300 cm^3
C. 350 cm^3 D. 400 cm^3 (B)

Explanation: Volume = Volume of the cuboid - Volume of four conical depressions.

5. A cone-shaped vessel with height 8 cm and radius 5 cm is filled with water. Lead shots (sphere, radius 0.5 cm) are dropped, and one-fourth of water flows out. The number of shots dropped is:

- A. 50
B. 100
C. 150
D. 200 (C)

Explanation: Volume of water displaced = Volume of lead shots, then the number of shots is calculated.

6. Volume of a sphere with radius 4 cm:

- A. $\frac{64}{3}\pi \text{ cm}^3$
B. $\frac{16}{3}\pi \text{ cm}^3$
C. $\frac{32}{3}\pi \text{ cm}^3$
D. $\frac{128}{3}\pi \text{ cm}^3$ (A)

Explanation: Volume = $\frac{4}{3}\pi r^3$, where $r=4 \text{ cm}$

7. Volume of a cone (radius 3 cm, height 8 cm):

- A. 24 cm^3
B. 72 cm^3
C. 30 cm^3
D. 96 cm^3 (A)

Explanation: Volume = $\frac{1}{3}\pi r^2 h$, substituting values gives 24 cm^3 .

8. A toy with cone and hemisphere has a total surface area of:

- A. 120 cm^2
B. 140 cm^2
C. 160 cm^2
D. 180 cm^2 (B)

Explanation: Total surface area = Surface area of cone + surface area of hemisphere.

9. Volume of a cone (slant height 10 cm, radius 6 cm):

- A. 180 cm^3 B. 200 cm^3
C. 240 cm^3 D. 260 cm^3 (A)

Explanation: Volume = $\frac{1}{3}\pi r^2 h$, where height is calculated from the slant height.

10. Surface area of a hemisphere with radius 7 cm:

- A. 196 cm^2
B. 254 cm^2
C. 308 cm^2
D. 336 cm^2 (B)

Explanation: Surface area = $3\pi r^2$, which equals 254 cm^2 .