

## CHAPTER-11 | : Surface Areas and Volumes

QUIZ  
PART-14

1. The volume of iron in a hemispherical tank with radius 1 m and thickness 1 cm is:

- A.  $0.13 \text{ m}^3$   
 B.  $0.15 \text{ m}^3$   
 C.  $0.18 \text{ m}^3$   
 D.  $0.12 \text{ m}^3$  (A)

**Explanation:** Difference in volume between inner and outer hemisphere.

2. The radius of a sphere with surface area  $154 \text{ cm}^2$  is:

- A. 5 cm  
 B. 7 cm  
 C. 6 cm  
 D. 8 cm (B)

**Explanation:** Radius = 7 cm from surface area formula.

3. Dome white-washing cost 4989.6 for  $249.48 \text{ m}^2$ . The inside surface area is:

- A.  $249.48 \text{ m}^2$   
 B.  $349.48 \text{ m}^2$   
 C.  $200.48 \text{ m}^2$   
 D.  $499.48 \text{ m}^2$  (A)

**Explanation:** Calculated using cost per  $\text{m}^2$ .

4. Volume of air in a hemispherical dome with known radius is:

- A.  $200 \text{ m}^2$   
 B.  $250 \text{ m}^3$   
 C.  $350 \text{ m}^3$   
 D.  $450 \text{ m}^3$  (B)

**Explanation:** Volume =  $\frac{2}{3} \pi r^3$

5. Volume of a sphere formed by melting 27 smaller spheres is:

- A. 27 times original  
 B. Same as original  
 C. 9 times original  
 D. 3 times original (A)

**Explanation:** Volume of new sphere is sum of smaller sphere volumes.

6. Radius of sphere formed by melting 27 spheres is:

- A.  $r = r$   
 B.  $r = 3r$   
 C.  $r = 9r$   
 D.  $r = 27r$  (B)

**Explanation:** New radius is 3 times the original radius.

7. Ratio of surface areas of original sphere and new sphere is:

- A. 1:9  
 B. 1:27  
 C. 1:3  
 D. 1:6 (A)

**Explanation:** Surface area is proportional to  $r^2$ .

8. Volume of a spherical capsule with diameter 3.5 mm is:

- A.  $35 \text{ mm}^3$   
 B.  $45 \text{ mm}^3$   
 C.  $50 \text{ mm}^3$   
 D.  $55 \text{ mm}^3$  (B)

**Explanation:** Volume =  $\frac{4}{3} \pi r^3$

9. Surface area of a hemisphere with radius 6 cm is:

- A.  $216 \text{ cm}^2$   
 B.  $324 \text{ cm}^2$   
 C.  $432 \text{ cm}^2$   
 D.  $256 \text{ cm}^2$  (B)

**Explanation:** Surface area =  $3\pi r^2$

10. Volume of a sphere with radius 3 cm is:

- A.  $36 \text{ cm}^2$   
 B.  $100 \text{ cm}^2$   
 C.  $113 \text{ cm}^2$   
 D.  $120 \text{ cm}^2$  (C)

**Explanation:** Volume =  $\frac{4}{3} \pi r^3$