



Exercise 13D

Question 2:

$$\text{Volume of the sphere} = \left(\frac{4}{3} \pi r^3\right)$$

$$\Rightarrow 38808 = \frac{4}{3} \times \frac{22}{7} \times r^3 \quad [\because \text{Volume} = 38808 \text{ cm}^3]$$

$$\Rightarrow r^3 = \frac{38808 \times 3 \times 7}{88} = 9261$$

$$\Rightarrow r = 21 \text{ cm}$$

$$\begin{aligned} \therefore \text{Surface area of the sphere} &= 4\pi r^2 \\ &= \left(4 \times \frac{22}{7} \times 21 \times 21\right) \text{ cm}^2 \\ &= 5544 \text{ cm}^2 \end{aligned}$$

Question 3:

$$\text{Volume of the sphere} = 606.375 \text{ m}^3 \quad \dots(1)$$

$$\text{Volume of the sphere} = \frac{4}{3} \pi r^3$$

$$\Rightarrow 606.375 = \frac{4}{3} \times \frac{22}{7} \times r^3 \quad [\text{from (1)}]$$

$$\Rightarrow r^3 = \frac{606.375 \times 3 \times 7}{4 \times 22} = 144.703125$$

$$\Rightarrow r = 5.25 \text{ m}$$

$$\begin{aligned} \text{Surface area of the sphere} &= 4\pi r^2 \\ &= 4 \times \frac{22}{7} \times 5.25 \times 5.25 \text{ m}^2 \\ &= 346.5 \text{ m}^2 \end{aligned}$$

Question 4:

Let the radius of the sphere be r m.

$$\text{Then, its surface area} = (4\pi r^2)$$

$$\therefore (4\pi r^2) = 394.24$$

$$[\text{Surface area} = 394.24 \text{ m}^2]$$

$$4 \times \frac{22}{7} \times r^2 = 394.24$$

$$r^2 = \left(\frac{394.24 \times 7}{4 \times 22}\right) = 31.36$$

$$r = \sqrt{31.36} = 5.6 \text{ m}$$

$$\therefore \text{radius of the sphere} = 5.6 \text{ m}$$

$$\therefore \text{Volume of the sphere} = \left(\frac{4}{3} \pi r^3\right)$$

$$= \left(\frac{4}{3} \times \frac{22}{7} \times 5.6 \times 5.6 \times 5.6\right) \text{ m}^3$$

$$= 735.91 \text{ m}^3$$

$$\therefore \text{Volume of the sphere} = 735.91 \text{ m}^3$$

***** END *****

