



Exercise 13D

Question 1:

(i) Radius of sphere = 3.5 cm

$$\begin{aligned}\therefore \text{Volume of the sphere} &= \left(\frac{4}{3} \pi r^3\right) \\ &= \left(\frac{4}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 3.5\right) \text{ cm}^3 \\ &= 179.67 \text{ cm}^3\end{aligned}$$

$$\begin{aligned}\therefore \text{Surface area of the sphere} &= (4\pi r^2) \\ &= \left(4 \times \frac{22}{7} \times 3.5 \times 3.5\right) \text{ cm}^2 \\ &= 154 \text{ cm}^2\end{aligned}$$

(ii) Radius of the sphere = 4.2 cm

$$\begin{aligned}\therefore \text{Volume of the sphere} &= \left(\frac{4}{3} \pi r^3\right) \\ &= \left(\frac{4}{3} \times \frac{22}{7} \times 4.2 \times 4.2 \times 4.2\right) \text{ cm}^3 \\ &= 310.464 \text{ cm}^3\end{aligned}$$

$$\begin{aligned}\therefore \text{Surface area of the sphere} &= (4\pi r^2) \\ &= \left(4 \times \frac{22}{7} \times 4.2 \times 4.2\right) \text{ cm}^2 \\ &= 221.76 \text{ cm}^2\end{aligned}$$

(iii) Radius of sphere = 5 m

$$\begin{aligned}\therefore \text{Volume of the sphere} &= \left(\frac{4}{3} \pi r^3\right) \\ &= \left(\frac{4}{3} \times \frac{22}{7} \times 5 \times 5 \times 5\right) \text{ m}^3 \\ &= 523.81 \text{ m}^3\end{aligned}$$

$$\begin{aligned}\therefore \text{Surface area of the sphere} &= (4\pi r^2) \\ &= \left(4 \times \frac{22}{7} \times 5 \times 5\right) \text{ m}^2 \\ &= 314.28 \text{ m}^2\end{aligned}$$

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