



Exercise 13D

Question 14:

Here, diameter of sphere = 15.6 cm

$$\therefore \text{Radius of sphere} = \left(\frac{15.6}{2}\right) \text{ cm} = 7.8 \text{ cm}$$

and, height of cone = 31.2 cm

Then,

$$\frac{4}{3} \pi \times R^3 = \frac{1}{3} \pi \times r^2 \times h$$

$$\Rightarrow \frac{4}{3} \pi \times (7.8)^3 = \frac{1}{3} \pi \times r^2 \times 31.2$$

$$\Rightarrow r^2 = \frac{\frac{4}{3} \times \pi \times (7.8)^3}{\frac{1}{3} \times \pi \times 31.2}$$

$$r^2 = \left(\frac{4 \times 474.552}{31.2}\right) = (60.84) = (7.8)^2$$

$$\Rightarrow r = 7.8 \text{ cm}$$

$$\therefore \text{Diameter of cone} = (2 \times 7.8) \text{ cm} = 15.6 \text{ cm.}$$

Question 15:

Here, diameter of sphere = 28 cm

$$\therefore \text{radius of sphere} = \left(\frac{28}{2}\right) \text{ cm} = 14 \text{ cm}$$

Diameter of cone = 35

$$\therefore \text{radius of cone} = \left(\frac{35}{2}\right) \text{ cm} = 17.5 \text{ cm}$$

$$\therefore \frac{4}{3} \times \pi \times R^3 = \frac{1}{3} \pi \times (r)^2 \times h$$

$$\begin{aligned} \Rightarrow h &= \frac{\frac{4}{3} \times \pi \times (14)^3}{\frac{1}{3} \times \pi \times (17.5)^2} \\ &= \left(\frac{4 \times 2744}{306.25}\right) \text{ cm} \\ &= \left(\frac{10976}{306.25}\right) \text{ cm} = 35.84 \text{ cm} \end{aligned}$$

$$\therefore \text{Height of the cone} = 35.84 \text{ cm}$$

\*\*\*\*\* END \*\*\*\*\*