Exercise 13D

Question 14:

Here, diameter of sphere $= 15.6\,cm$

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

and, height of cone $= 31.2\,cm$

Then,

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

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

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

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

$$\Rightarrow \quad r = 7.8\,cm$$

$\therefore$ Diameter of cone $= (2 \times 7.8)\,cm = 15.6\,cm.$

Question 15:

Here, diameter of sphere $= 28\,cm$

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

Diameter of cone $= 35$

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

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

$$\Rightarrow \quad h = \frac{\frac{4}{3} \times \pi \times (14)^3}{\frac{1}{3} \times \pi \times (17.5)^2}$$

$$= \left(\frac{4 \times 2744}{306.25}\right) cm$$

$$= \left(\frac{10976}{306.25}\right) cm = 35.84\,cm$$

$\therefore$ Height of the cone $= 35.84\,cm$

********** END **********