



Exercise 13C

Question 3:

Here, Volume $= (100\pi) \text{ cm}^3$, height $(h) = 12 \text{ cm}$

$$\text{Volume of the cone} = \frac{1}{3} \pi r^2 h$$

$$\Rightarrow 100 \pi = \frac{1}{3} \pi \times r^2 \times 12$$

$$\Rightarrow r^2 = \frac{100\pi \times 3}{\pi \times 12}$$

$$\Rightarrow r^2 = 25$$

$$\Rightarrow r = \sqrt{25} = 5 \text{ cm.}$$

$$\text{Slant height}(\ell) = \sqrt{h^2 + r^2}$$

$$= \sqrt{12^2 + 5^2}$$

$$\ell = \sqrt{144 + 25} = \sqrt{169} = 13 \text{ cm}$$

$$\therefore \text{Slant height, } \ell = 13 \text{ cm}$$

$$\therefore \text{Curved surface area} = \pi r \ell$$

$$= \pi \times 5 \times 13 \text{ cm}^2$$

$$= 65\pi \text{ cm}^2$$

Question 5:

Here, curved surface area $= 550 \text{ cm}^2$ and

slant height $(\ell) = 25 \text{ cm}$

$$\therefore \text{Curved surface area} = \pi r \ell$$

$$\Rightarrow 550 = \frac{22}{7} \times r \times 25$$

$$\Rightarrow r = \left(\frac{550 \times 7}{22 \times 25} \right) \text{ cm} = 7 \text{ cm}$$

$$\text{Now, height}(h) = \sqrt{\ell^2 - r^2}$$

$$= \sqrt{(25)^2 - (7)^2}$$

$$= \sqrt{625 - 49}$$

$$= \sqrt{576} = 24 \text{ cm}$$

$$\therefore \text{height of the cone} = 24 \text{ cm}$$

$$\text{Volume of the cone} = \frac{1}{3} \pi r^2 h$$

$$= \left(\frac{1}{3} \times \frac{22}{7} \times 7 \times 7 \times 24 \right) \text{ cm}^3$$

$$= 1232 \text{ cm}^3$$

$$\therefore \text{Volume of the cone} = 1232 \text{ cm}^3$$

***** END *****