Exercise 13C

Question 6:

Here, radius, $r = 35\,cm$ and slant height, $\ell = 37\,cm$

$$\therefore \quad h = \sqrt{\ell^2 - r^2}$$

$$= \sqrt{(37)^2 - (35)^2}$$

$$= \sqrt{1369 - 1225} = \sqrt{144} = 12\,cm$$

$$\therefore \quad \text{height}(h) = 12\ cm$$

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

$$= \left(\frac{1}{3} \times \frac{22}{7} \times 35 \times 35 \times 12\right) cm^3$$

$$= 15400\,cm^3$$

$$\therefore \quad \text{Volume of the cone} = 15400\,cm^3$$

Question 7:

Here, curved surface area = $4070\ cm^2$

$$\text{Diameter} = 70\ cm \Rightarrow \text{radius} = \left(\frac{70}{2}\right)\ cm = 35\ cm$$

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

$$\Rightarrow \quad 4070 = \frac{22}{7} \times 35 \times \ell$$

$$\Rightarrow \quad \ell = \left(\frac{4070}{110}\right) cm = 37\ cm$$

$$\therefore \quad \text{slant height} = 37\ cm.$$

Question 8:

Here, radius = 7 m and height(h) = 24 m

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

$$= \sqrt{(24)^2 + (7)^2}$$

$$\ell = \sqrt{576 + 49} = \sqrt{625} = 25\ m$$

$$\text{Now, area of cloth} = \pi r\ell$$

$$= \left(\frac{22}{7} \times 7 \times 25\right) m^2 = 550\ m^2$$

$$\therefore \text{ length of cloth} = \frac{\text{area of cloth}}{\text{width of cloth}} = \left(\frac{550}{2.5}\right) m$$

$$= 220\ m$$

$\therefore$ Length of cloth required to make a conical tent = 220 m

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