Exercise 13C

Question 1:

Here, $r = 35\,cm$ and $h = 84\,cm$

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

$= \left(\frac{1}{3} \times \frac{22}{7} \times 35 \times 35 \times 84\right) cm^3$

$= 107800\ cm^3$

$\therefore$ Curved surface area $= \left(\pi r \sqrt{h^2 + r^2}\right)$ $\left[\because l = \sqrt{h^2 + r^2}\right]$

$= \pi r \sqrt{84^2 + 35^2}$

$= \pi r \sqrt{8281}$

$= \frac{22}{7} \times 35 \times 91$

$= 10010\ cm^2$

$\therefore$ Total surface area $= \pi r(l + r)$

Now, $l = \sqrt{h^2 + r^2}$

$= \sqrt{84^2 + 35^2}$

$= \sqrt{7056 + 1225} = \sqrt{8281} = 91\,cm$

$\therefore$ Total surface area $= \frac{22}{7} \times 35(91 + 35)$

$= (22 \times 5 \times 126)\,cm^2 = 13860\,cm^2$

Question 2:

Here, height $(h) = 6\,cm$ and slant height $(\ell) = 10\,cm$

$\therefore$ radius $(r) = \sqrt{\ell^2 - h^2}$

$= \sqrt{10^2 - 6^2} = \sqrt{100 - 36}$

$= \sqrt{64} = 8\,cm$

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

$= \left(\frac{1}{3} \times 3.14 \times 8 \times 8 \times 6\right) cm^3$

$= 401.92\ cm^3$

$\therefore$ Curved surface area $= \pi r \ell$

$= (3.14 \times 8 \times 10)\ cm^2$

$= 251.2\ cm^2$

$\therefore$ Total surface area $= \pi r(\ell + r)$

$= \pi r(10 + 8)$

$= (3.14 \times 8 \times 18)\,cm^2$

$= 452.16\,cm^2$

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