Exercise 13C

Question 17:

Here, height(h) = 10 cm and radius = 6 cm

$\therefore$ Volume of the remaining solid $= (\pi r^2 h) - (\frac{1}{3}\pi r^2 h)$

$= (\pi \times 6 \times 6 \times 10)\ cm^3 - \left(\frac{1}{3}\pi \times 6 \times 6 \times 10\right) cm^3$

$= \frac{2}{3}\pi \times 6 \times 6 \times 10\ cm^3$

$= \left(\frac{2}{3} \times 3.14 \times 360\right) cm^3 = 753.6\ cm^3$

$\therefore$ Volume of the remaining solid = $753.6\ cm^3$

Question 18:

Diameter of the pipe = 5mm = 0.5cm

Radius of the pipe $= \frac{0.5}{2} = 0.25cm$

Length of the pipe = 10 metres = 1000 cm

Volume that flows in 1 min $= \left[\pi \times (0.25)^2 \times 1000\right] cm^3$

$\therefore$ Volume of the conical vessel $= \left[\frac{1}{3}\pi \times (20)^2 \times 24\right] cm^3$

$\therefore$ Required time $= \left[\frac{\frac{1}{3}\pi \times (20)^2 \times 24}{\pi \times (0.25)^2 \times 1000}\right] min$

$= \left[\frac{\frac{1}{3}\pi \times 400 \times 24}{\pi \times 0.0625 \times 1000}\right] min$

$= 51.2\ min$

$= 51\ min\ 12\ sec$

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