



Exercise 19C

Question 4:

$R = 20 \text{ cm}$ ,  $r = 8 \text{ cm}$  and  $h = 16 \text{ cm}$

$$\begin{aligned}\therefore l &= \sqrt{h^2 + (R - r)^2} = \sqrt{(16)^2 + (20 - 8)^2} \\ &= \sqrt{256 + 144} \text{ cm} = 20 \text{ cm}\end{aligned}$$

$$\begin{aligned}\text{Total surface area of container} &= \pi l (R + r) + \pi r^2 \\ &= [3.14 \times 20 \times (20 + 8) + 3.14 \times 8 \times 8] \text{ cm}^2 \\ &= (3.14 \times 20 \times 28 + 3.14 \times 8 \times 8) \text{ cm}^2 \\ &= (1758.4 + 200.96) \text{ cm}^2 \\ &= 1959.36 \text{ cm}^2\end{aligned}$$

$$\text{Cost of metal sheet used} = \text{Rs} \left( 1959.36 \times \frac{15}{100} \right) = \text{Rs. } 293.90$$

Question 5:

$R = 15 \text{ cm}$ ,  $r = 5 \text{ cm}$  and  $h = 24 \text{ cm}$

$$\begin{aligned}\therefore l &= \sqrt{h^2 + (R - r)^2} = \sqrt{(24)^2 + (10)^2} \text{ cm} \\ &= \sqrt{576 + 100} \text{ cm} = \sqrt{676} \text{ cm} = 26 \text{ cm}\end{aligned}$$

$$\begin{aligned}\text{(i) Volume of bucket} &= \frac{1}{3} \pi h (R^2 + r^2 + Rr) \\ &= \frac{1}{3} \times 3.14 \times 24 \times [(15)^2 + (5)^2 + 15 \times 5] \\ &= (25.12 \times 325) \text{ cm}^3 \\ &= 8164 \text{ cm}^3 = 8.164 \text{ litres}\end{aligned}$$

$$\text{Cost of milk} = \text{Rs. } (8.164 \times 20) = \text{Rs. } 163.28$$

(ii) Total surface area of the bucket

$$\begin{aligned}&= \pi l (R + r) + \pi r^2 \\ &= (3.14 \times 26 \times 20 + 3.14 \times 5 \times 5) \text{ cm}^2 \\ &= 1711.3 \text{ cm}^2\end{aligned}$$

$$\text{Cost of sheet} = \text{Rs} \left( \frac{1711.3 \times 10}{100} \right) = \text{Rs. } 171.13$$

\*\*\*\*\* END \*\*\*\*\*

