Exercise 13A

Question 17:

Let each side of the cube be a cm

Then, the lateral surface area of the cube = $(4a^2)$ cm²

$\therefore \quad 4a^2 = 900$

$\Rightarrow \quad a^2 = \frac{900}{4} = 225$

$\therefore \quad a = \sqrt{225} = 15$ cm

$\therefore$ Volume of the cube = a^3

$= (15)^3 = (15 \times 15 \times 15)\text{cm}^3$

$= 3375\ \text{cm}^3.$

Question 18:

Volume of the cube $= 512\ \text{cm}^3$ [Volume = a^3]

$\therefore$ Each edge of the cube = $\sqrt[3]{512} = 8$ cm.

$\therefore$ Surface area of cube = $6a^2$

$= 6 \times (8)^2\ \text{cm}^2$

$= (6 \times 64)\ \text{cm}^2$

$= 384\ \text{cm}^2$

Question 19:

Volume of the new cube = $[(3)^3 + (4)^3 + (5)^3]$ cm

$= (27 + 64 + 125)\ \text{cm}^2$

$= 216\ \text{cm}^2$

Now edge of this cube = a cm

And, $a^3 = 216$

$\therefore \quad a = 6\text{cm}$

Lateral surface area of the new cube = $4a^2\ \text{cm}^2$.

$= 4 \times (6)^2\ \text{cm}^2$

$= (4 \times 36)\ \text{cm}^2$

$= 144\ \text{cm}^2$

$\therefore$ The lateral surface area of the new cube formed $= 144\ \text{cm}^2$.

Question 20:

1 hectare = $10000\ \text{m}^2$

Area = 2 hectares = $2 \times 10000\ \text{m}^2$

Depth of the ground = 5 cm = $\frac{5}{100}$ m

Volume of water = (area x depth)

$= \left(2 \times 10000 \times \frac{5}{100}\right)\text{m}^3$

$= 1000\ \text{m}^3$

$\therefore$ Volume of water that falls $= 1000\ \text{m}^3$

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