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Maths Test

~~Subjective~~

Q1. A hemispherical — — — — contain?

Ans. Volume of hemisphere $= \frac{2}{3}\pi r^3$

$= \frac{2}{3} \times \frac{22}{7} \times 3.5 \times 3.5 \times 3.5$

$= 89.8 \text{ cm}^3$.

So, volume of water hemisphere can store is equal to 89.8 cm^3.

Q2. If the — — — — volume?

Ans. Let the ~~initial~~ original radius of cylinder be r and height be h.

$\therefore$ original Volume $= \pi r^2 h$.

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Neco radius, ~~r~~ = $\frac{r}{2}$ height = 2h

Neo Volume = $\frac{\pi r^2}{4} \times 2h = \frac{\pi r^2 h}{2}$.

Ratio = $\frac{\frac{\pi r^2 h}{2}}{\pi r^2 h} = \frac{1}{2} = 1:2$. (Ans)

Q4. A cuboidal — — — — liquid?

Ans: Let B the height of vessel be 'h' m.

Neco, volume of cuboidal vessel = l x b x h.

~~l x b~~ l x b x h = 380 m^3.

10 x 8 x h = 380.

$h = \frac{380}{80} = 4.75$ m.

∴ height of vessel is 4.75 m.

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Q5. A conical — — — — kilolitres?

Ans. Diameter(d) = 3.5 m.

∴ Radius(r) = $\frac{d}{2} = \frac{3.5}{2}$ m = 1.75 m.

Also, Depth(h) = 12 m.

∴ Capacity of conical pit

$= \frac{1}{3}\pi r^2 h = \frac{1}{3} \times \frac{22}{7} \times (1.75)^2 \times 12$

$= 38.5 m^3 = 38.5 \times 1000 l = 38.5 kl$

Q6. A well — — — — — embankment?

Ans. Let height of embankment be 'h' m.

Diameter of well, d = 3m.
Radius " ", r = 1.5 m.
Height " ", h = 14 m.

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Volume of embankment = volume of soil dug from

$\pi r^2 h = \pi r^2 h$

$\pi\{(5.5)^2 - (1.5)^2\} \times h = \pi \times (1.5)^2 \times 14.$

$(5.5 + 1.5)(5.5 - 1.5) \times h = (1.5)^2 \times 14.$

$7 \times 4 \times h = \frac{3}{2} \times \frac{3}{2} \times 14.$

$\therefore h = \frac{9}{8}$

$\therefore h = 1.125 m.$

$\therefore$ Height of embankment $= 1.125 m.$

Q7. A wall — — — — required?

Ans. Length of wall, $l = 10 m = 100 cm.$
Breadth " $b = 42 m = 4200 cm.$
Height " " $h = 5 m = 500 cm.$

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= Volume of wall = l x b x h *
= 100 x 420 x 500
= 21000000 cm^3.

Dimensions of brick = 42 cm x 12 cm x 10 cm.

∴ Volume of each brick = 42 cm x 12 cm x 10 cm
= 5040 cm^3.

Let number of bricks required be n.

n x Volume of each brick = Volume of the wall.
therefore, n = Volume of the wall / Volume of each brick.

$n = 21000000 cm^3 / 5040 cm^3$

n = 4166.67.

By Thus, the number of bricks required is 4166.67.