C. Numericals:-

1. $1\ ml = 1\ cm^3$

$1l = \frac{1}{1000}\ cm^3$

$1.28l = 0.00128\ cm^3$

∴ a) $0.00128 cm^3$

~~$1ml = 10 cm^3$~~, $1cm^3 = \frac{1}{1000000}\ m^3$; $1l = \frac{1}{1000}\ cm^3$

$1\ ml = 1cm^3$, $1l = \frac{1}{1000} \times 1000000\ m^3 \equiv 1000 m^3 = l$

$1g = \frac{1}{1000}\ kg$

$1.28g = \frac{1.28}{1000}\ kg \Rightarrow \frac{\frac{1.28}{1000}\ kg}{1000\ m^3}$

$= \frac{1.28}{1000} \times 1000 = 1.28\ kg/m^{-3}$

2. Volume of hall = $(10 \times 7 \times 5)\ m$
$= 350\ m$

~~Volume~~ ρ of air = $1.11\ kg/m^{-3}$

Mass = $V \times D$

Mass of air in hall = 350×1.11
$= 388.5\ kg$

3. $1\ gm/cm^{-3} = 1000\ kg/m^{-3}$

$2.7\ gm/cm^{-3} = 2.7 \times 1000\ kg/m^{-3}$
$= 2700\ kg/m^{-3}$

4. $1\ kg/m^{-3} = \frac{1}{1000}\ g/m^{-3}$

$600\ kg\ m^{-3} = \frac{600}{1000}\ g/m^{-3}$

$= 0.6\ g/cm^{-3}$

5. $M = V \times D$
$\Rightarrow 438.6 = 86\ cm^3 \times D$
$= \frac{438.6}{86} = D \Rightarrow 5.1\ g/cm^3$

6. $M = V \times D$

$150 = 400 \times D$

$\frac{150}{400} = D$

$\frac{3}{8} = D$

(a) $D = \frac{3}{8}\ g/cm^{-3}$

6. $\Rightarrow M \times D$

$\Rightarrow 150 = 200 \times D$

$\frac{150}{200} = D$

$\frac{3}{4} = D = 0.75\ gm/cm^3$

$1\ gm/cm^{-3} = 1000\ kg/m^{-3}$

$0.75\ gm/cm^{-3} = 0.750 \times 1000\ kg/m^{-3}$

$= 750\ kg/m^{-3}$

7. $M = V \times D$, $D = 0.8\ g/cm^3 = 800\ kg/m^3$

$6000 = 800 \times 800 \times V$

$V = 7.5\ kg/m^{-3}$

8. $M = V \times D$

Weight of water = 24 g ml

" " " + solid = 42 g ml

" " " displaced = 42 - 24 = 18 ml

$1\ ml = cm^3$

Weight of volume displaced = Wt. of solid.

$18\ ml = 18\ cm^3$

$72\ g = 18 \times D$

$\frac{72}{18} = D = 4\ gm/cm^{-3}$

9. W_1 = Wt. Density bottle

W_2 = " " " + water

W_3 = " " " + liquid

$W1 = 21.8\ g$

$W2 = 41.8\ g$

$W3 = 40.6\ g$

~~Volume =~~

Wt. of water = W1 - W2

= 41.8 - 21.8g

= ~~40g~~ 20g

1gr 1ml = 1 gm/cm^3 = density of water

$\Rightarrow$ 20g / 20cm^3

a) $\Rightarrow$ 20 cm^3 = volume of density bottle

b) W3 - W1 = Wt. of fluid

= 40.6 - 21.8

= 18.8 g

$$D = \frac{18.8 \times 10}{20 \times 10} = \frac{94}{200} = 0.94$$

10. M_1 - 22g

M_2 = 50g

M_3 = 54g

Wt. of water = 50 - 22

= 28g

1 g/cm^3 = density of water.

28g / 28 cm^3

28 cm^3 = Volume of density bottle.

$M_3 - M_1 = 54g - 22g$

$= 32g$

Density of bromine vapour = 32g / 28 cm^3

$= \frac{32^{8}}{28_{7}} = 1.14 g/cm^3$

$RD = \frac{1.14}{1}$

$\Rightarrow 1.14$

11 $M_1 = 30g$

$M_2 = 75g$

$M_3 = 60g$

Wt. of water : 75 - 30

$= 45g$

1 ml = 1 cm^3, 1 g / cm^3 = density of water

45g / 45 cm^3 =

a) Density of bottle = 45 cm^3

b) Wt. of liquid = W3 - W1

= 65 - 30

= 35g

Density of liquid = $\frac{35g}{45}$ = 0.77 g cm^{-3}

RD = $\frac{0.77 g\ cm^{-3}}{1 g\ cm^{-3}}$ = 0.77