

## ASSIGNMENT-1

- ① → The density of a substance is its mass per volume.
- ② → S.I unit of density is  $M^{-3}$  in CGS system unit of mass is g and unit of volume is  $cm^3$ , so CGS unit of density is  $g/cm^3$  (gram per cubic centimetre).
- ③ → The statement means one cubic centimetre volume of brass has mass of 8.4g.
- ④ → The order is:- cork, water, iron, brass, and mercury.
- ⑤ → Most of the liquids increase in volume with increase in temperature, but water shows odd behaviour. water has its volume and density both at  $4^\circ C$ . when the volume increases density decreases and when the density increases volume decreases.
- ⑥ → when a given quantity of liquid is

heated, the mass doesn't change. The volume changes and increases with rise in temperature. The density changes & decreases.

- ⑦ → To find the density of the coin material, we need to find its mass by beam balance and its volume by measuring cylinder.

### EXPERIMENT -

Let the initial volume of water be  $= V_1 = 42 \text{ ml}$ .

Let the final volume of water <sup>be</sup> when the coin is added in the cylinder  $= V_2 = 52 \text{ ml}$ .

So, the volume of the coin is  $= V_2 - V_1$   
 $= 52 - 42 = 10 \text{ ml}$ .

Density of the coin = D

$$= D = \frac{M}{V} = \frac{50}{52-42} = \frac{50}{10} = 5 \text{ g/cm}^3$$

→

⑧ → To find the density of a liquid =  
 $D = M/V$ .

we need to find the volume of liquid.  
for ex - milk.

Experiment:-

To find the mass of milk =

$$M_1 = 70 \text{ g (wt)}$$

fill the beaker half with milk and  
measure =  $M_2 = 116 \text{ g (wt)}$

Now, to find the volume of milk into  
measuring cylinder & note the volume  $V$   
= 40 (wt)

$$= \text{Density of milk} = D = \frac{M}{V} = \frac{M_2 - M_1}{40}$$

$$= \frac{(116 - 70)}{40} = \frac{46}{40} = \frac{4.6}{4} = 1.15 \text{ gm}^{-3}$$

⑨ → Density bottles are used to determine  
the density of the liquids.

It makes use of the bottles weight and

the bottle is filled with water and at  
last the bottle is weighted with the liquid  
and the density is to be determined.