

## Home Assignment 1

1) The density of alcohol is  $600 \text{ kg/m}^3$ . Express it in  $\text{g cm}^{-3}$ .

$$\text{Ans } D = 600 \text{ kg/m}^3$$

$$= (600 \times 1000) / (100 \times 100 \times 100)$$

$$= \frac{600000}{1000000}$$

$$= \frac{6}{10}$$

$$= \frac{6}{10} = 0.6 \text{ g/cm}^3$$



2) A piece of wood of mass 150 g has a volume of 200 cm<sup>3</sup>. Find the density of wood in I.C.S. unit (S.I. Unit)

Ans: 
$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

$$\frac{150 \text{ g}}{200 \text{ cm}^3} = 0.75 \text{ g/cm}^3$$

So, density = 0.75 g/cm<sup>3</sup>



3 Calculate the density of solid from the following data.

a) Mass of solid = 72g

b) Initial volume of water in measuring

cylinder = 24 ml

c) Final volume of water when completely immersed in water = 42 ml

$$\text{Am Density} = \frac{\text{Mass}}{\text{Volume}}$$

$$= \frac{72\text{g}}{42-24}$$

$$= \frac{72\text{g}}{18}$$

$$= 4$$

So, density = 4 gm per  $\text{cm}^3$



Q1) How does the density of a liquid vary with temperature?

Ans As the temperature increases, volume also increases. So, when the volume of a substance increases, the density of a substance decreases, and when volume decreases, the density increases.

Q2) What is density bottle? How it is used to find the density of a liquid?

Ans A density bottle is specially designed bottle which is used to determine the density of a liquid. It stores a fixed volume of liquid.