

Home Assignment

Physical Quantities and Measurements

① Define the term density of a substance.

Ans) Density of a substance defined as the mass per unit volume of the material.

② State the SI and the CGS unit of it. How they are related?

Ans) SI unit of density is 1000 kg/m^3 and CGS unit is 1 g/cm^3 .

One g/cm^3 is equal to 1000 kg/m^3 .

One cubic centimetre is equal to one millilitre.

③ How does the density of water change when heated from 0 to 4 degree Celsius? How density will change with temperature?

Ans) ~~The density of water changes because~~
~~the particles~~ ~~they expand on heating~~
~~with~~

The density of almost all liquids decreases with the increase in temperature, because they all expand on

heating with the exception of water. Water contracts on heating from 0°C to 4°C and expands on heating above 4°C .

The density of water is maximum at 4°C . It decreases when it is cooled from 4°C to 0°C or it is heated above 4°C .

The density mass of 5L water is 5kg. Find the water in gram per centimetre cube?

Ans) Mass = 5 kg = 5000g
Volume = 5 litre = 5000cm³

$$\text{Density of water } d = \frac{M}{V} = \frac{5000\text{g}}{5000\text{cm}^3} = 1\text{gcm}^{-3}$$