

HCW
7.10.21

Homework

► Physical Quantities and measurement.

Q-1 Define density of a substance?

As- The density of a substance is defined as the mass of a unit volume of

that substance. $\text{Density} = \frac{\text{Mass}}{\text{Volume}}$

$$\text{or } d = \frac{M}{V}$$

Q.2 state the S.I and C.G.S unit of density and how they related.

As- The S.I unit of a ~~sub~~ density is kilogram

(Symbol Kg). and of volume is = Cubic

Centimetre (Symbol m^3). ~~Kg~~ Here

fore. The S.I unit of density is $\frac{kg}{m^3}$

kgm^{-3} . The C.G.S unit of density

is $\frac{\text{g}}{\text{cm}^3}$ or gcm^{-3} .

* The Relationship Between kgm^{-3} or

gcm^{-3}

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

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

$$\text{and } 1 \text{ m}^3 = (100 \text{ cm})^3$$

$$= 100 \times 100 \times 100$$

$$= 10,00,000 \text{ cm}^3$$

$$\text{or } 1 \text{ cm}^3 = \frac{1}{10,00,000} \text{ m}^3$$

$$= \frac{1}{10,00,000} \text{ kgcm}^{-3} = \frac{1 \text{ g}}{\text{cm}^3}$$

$$= \frac{1 \text{ kg}}{1000} \div \frac{1 \text{ m}^3}{1000000}$$

$$= \frac{1000000 \text{ kg m}^3}{1000}$$

$$= 1,000 \text{ kg m}^3$$

$$\sim 1 \text{ g cm}^{-3} = 1000 \text{ kg m}^{-3}$$

Q.3 How does density of Water changes when heated from 0 to 4 ° Degree Celsius?

As-3 When Water Contracts on heating from 0°C to 4°C and expands on heating above 4°C

X-X-X-X-X