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WEEKLY HOME STUDY PACKAGE - WEEK 5 (02/08/21 – 06/08/21)

Subject	**PHYSICS**	**Year/Level**	**11**
Strand	3 – FLUID STATICS		
Sub-strand	3.1 – Density – Relative Density		
Content Learning Outcome	-Apply the concept of density to floating and sinking -Apply knowledge and understanding of the basic properties of fluid at rest		

LESSON NOTES/ACTIVITY:

Relative Density

Relative density has no units; it is just a number which is defined as a ratio of density or ratio of masses.

Formula :

$$\text{Relative density} = \frac{\text{density of the substance}}{\text{density of water}}$$

OR

$$\text{Relative density} = \frac{\text{mass of a certain volume of substance}}{\text{mass of a equal volume of water}}$$

It means density of substance compared to density of water. Density of water is 1.0g/cm^3 or 1000kg/m^3.

Example

If the relative density of copper is 8.9, find its density in

(i) g/cm^3

$$\text{Relative density} = \frac{\text{density of the substance}}{\text{density of water}}$$

Density of substance (copper) = Relative density (8.9) × density of water (1.0g/cm^3)

= 8.9g/cm^3

(ii) kg /m^3

$$\text{Relative density} = \frac{\text{density of the substance}}{\text{density of water}}$$

Density of substance (copper) = Relative density (8.9) × density of water (1000kg/m^3)

= 8900kg/m^3

Activity

Use density of water as 1.0g/cm^3 or 1000kg/m^3.

What are the relative densities of :

(a) Cork whose density is 2.5g/cm^3 **(2 marks)**

(b) Petrol with density of 700kg/m^3 **(2 marks)**