

**PHYSICS – VIII**  
**Chapter-1 NOTES-1 MATTER**  
(S.R PAUL)

Give reasons

1. Why do we smell hot food from a distance?

Ans:- The gas molecule of smell exert *negligible force of attraction* on each other, occupy all the space and free to move in the space available in a continuous *zigzag motion*.

2. Why a wooden log cannot be compressed?

Ans:- *Intermolecular force* in solid wooden log is *very strong* and *intermolecular distance* between the molecules of solids is *very small*, so the wooden log cannot be compressed easily.

3. Why there is no change in temperature during the melting of a solid?

Ans:- Since the energy that goes into performing the *phase change* goes into breaking intermolecular forces, the temperature of the molecule does not change.

4. Why does a camphor tablet get converted to fumes on heating?

Ans:- A camphor tablet get converted to fumes on heating due to the process of *sublimation*.

5. Why is it so that the wet clothes dry after sometime when put in the sun?

Ans:- The wet clothes dry after sometime when kept on the sun as because it *evaporates* by the heat of the sun.

D. Answer in details

1. Explain the kinetic theory of matter.

Ans:- The matter is composed of a large number of small particle called atoms, which are in constant motion. It explains the behavior of matter and how the arrangement of atoms in different ways results in the formation of different states of matter. The main postulates are-

i. Matter is made up of atoms or molecules.

ii. In a gases molecules are always in continuous random motion.

iii. The molecules of matter always exert an attractive force on each other which is known as inter molecular force.

2. Write a short on the factors that affect the process of evaporation.

Ans:- The various factors affecting the rate of evaporation of a liquid are-

i. Area of the exposed surface.

ii. Temperature of the liquid.

iii. Temperature of the surroundings.

iv. Nature of the liquid.

v. Presence of wind.

vi. Presence of moisture in the air.

3. Explain the process of boiling on the basis of kinetic theory.

Ans:- Liquid molecules do not exert very strong force of attraction on each other and are loosely packed and free to move. When liquid is heated, the molecules gain kinetic energy and starts moving vigorously inside the liquid, to overcome the mutual force of attraction and are free to leave the surface of liquid. This is the gaseous state.

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**PHYSICS – VIII**  
**Chapter-2 Physical quantities and measurement**

Answer in short

1. Define relative density.

Ans:- It is the ratio of density of substance and density of water at 4°C.

$$\text{Relative Density} = \text{Density of substance} / \text{Density of water at } 4^{\circ}\text{C}.$$

2. What is a Eureka Can?

Ans:- It is cylindrical glass or plastic beaker which has a side opening present near its mouth. The volume of the can is equal to the volume of the liquid up to the spout. It is used to determine the volume of unknown substance.

3. Write the formula to determine density.

Ans:- Density( $\rho$ ) = Mass(m)/volume(V)

4. How will you relate relative density and density?

Ans:- Density of a substance = Relative density of the substance  $\times$  1gcm<sup>-3</sup>.

$$\text{Density of a substance} = \text{Relative density of the substance} \times 1000\text{kgm}^{-3}.$$

5. State the law of Floatation.

Ans:- It states that when a body floats in a liquid, the total weight of the body is equal to the weight of the liquid displaced by its immersed part.

$$\text{Weight of the floating body} = \text{weight of the liquid displaced by its immersed part}.$$

6. Why does hydrogen filled balloons rise up in air?

Ans:- Because the *density of hydrogen is less* as compared to that of air and the balloon experiences a *resultant buoyant force* larger than its weight acting *vertically upwards*.

7. The mass of an iron ball is 800g. What should be the volume of the ball if the density is 7.87gcm<sup>-3</sup>? Also find the density in the SI unit and the relative density.

Ans:-

$$\rho = m/V$$

$$7.87 = 800/V \Rightarrow V = 800/7.87 = 101.65 \text{ cm}^3.$$

$$\text{Density in SI} = \text{Density in cgs unit} \times 1000$$

$$= 7.87 \times 1000 = 7870\text{kgm}^{-3}.$$

$$\text{Relative density} = \text{Density of substance} / \text{density of water at } 4^{\circ}\text{C} = 7.87/1 = 7.87$$

Home work- Chapter-1 exercise question –A,B,C,D

Chapter-2 exercise question –A,B,C,D

Answer the following questions.

1. Why the clouds appear to float in sky?

2. Ramesh goes to a jewellery shop with his parents and buys a gold chain. When he comes back home, he refers his science book and finds the density of gold to be 19.3gcm<sup>-3</sup>. How can he determine if the chain he has brought is made of pure gold?

3. Discuss about the states of matter that forms the earth's atmosphere.

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