Matter and its composition

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Worksheet

(MCQs)

1. a. $2 \cdot 10^{-10}$ m

b. 1. solids

c. 3. In a liquid, move within its boundary

d. 1. more dense

e. 3. weaker than in solids

I. Fill in the blanks

a. identical

b. very less, moderate, least

c. Fig - Fig path

d. vibrate

e. gasses

2. The three states of matter are solid, liquid and gas.

3. Matter is anything that has mass and occupies space and can be perceived by our sense organs. It consists of atoms, molecules and ions.

4. They follow random motion.

Short answer questions

1. size or volume of the molecule =

$$\frac{10^{-3}\ m^3}{6.0 \times 10^{26}} = 1.6 \times 10^{30}\ m^3$$

2. The forces of cohesion is defined as the force of ~~Not discussed~~ attraction between the molecules of the same substance and the forces of adhesion is defined as the forces between the different substances and molecules

Short answer type questions

1. (c) Density

2. Take a beaker. Fill it partly with water. Add some lycopodium powder in the beaker containing water. Stir the ~~components~~ contents of the beaker with a glass rod. Take

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out a few drops of this suspension on a glass plate. Place it on the table and illuminate it with a table lamp. Observing the glass plate through a microscope, it is found that the fine particles of lycopodium powder move rapidly in a random manner and their path is Zig-Zag.

3. Solids - The molecules in the solids are tightly packed. ~~The solid mole~~ So, the intermolecular force is very highest, intermolecular space is least. They can not move but can vibrate about their mean position.

Liquids - The molecules in the liquids are less tightly packed in ~~solids~~ liquids than the solids. So, the intermolecular space is comparatively more than the solids and intermolecular force is comparatively less than in solids.

Gasses - The molecules in the gasses are ~~least~~ loosely packed in gasses. So, the interm

Molecular forces is least in gasses and intermolecular spaces is more than the liquids and solids.

Long answer questions

1. Solids → Molecules are closely packed and have negligible intermolecular space.

They have fixed shape and volume.

They don't flow.

They can't be compressed.

Solids are generally opaque except glass and diamond.

Liquids → Molecules are less closely packed than in solids.

More intermolecular space than solids.

Flow from higher to lower level

Pure liquids are transparent in nature.

They can be compressed a little.

Gas → 1. Molecules are loosely packed. Highest intermolecular space.

~~2. They have no definite~~

2. They can flow in every direction.

3. All the gasses are transparent in nature.

4. They can be compressed very easily.

5. They have no definite shape and volume.

2. The molecules in the liquid are less tightly packed than in solids. So, the intermolecular force is comparatively less than in solids. The intermolecular space in liquid particles is more than in solids.

Activity - Take a cup filled with water. Water occupies the shape of the cup. Pour this water into a glass. It fills half of

~~of~~ the glass. Pour this water into a bottle. The bottle is filled one third and water takes ~~is~~ the shape of the bottle. So, we concluded that ~~a li~~ water has no definite shape but a definite volume.