Worksheet
CH-1

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1. Multiple choice Questions :

(a) The diameter of a molecule is approximately

1. 1 cm
2. 10 cm
3. 10^{-10} cm
4. 1 m

(b) The intermolecular forces are strongest in

1. Solids
2. Liquids
3. Gases
4. Both (i) and (ii)

(b) The molecules

1. In solid, liquid and gass, move freely anywhere
2. In a solid, move freely within its boundary
3. In a liquid, move within its boundary
4. In a gass, move only within its boundary

(d) The solid are

1. More dense

2. Less dense

3. Highly compressible

4. Least dense

(e) The intermolecular forces in liquid are

1. As strong as in solids

2. Stronger than in solids

3. Weaker than in solid.

4. Weaker than in gases.

1. Fill in the blank

(a) All the molecules of a substance are

(b) The intermolecular spacing is higher in the solids, weaker in liquids and moving apart in gases

(c) The molecular motion in liquid and gas is in zig zag part

(d) In a solid, the molecules ——— but they remain at their fixed position

(e) The intermolecular forces are the weakest in ——— Gas

2. Name the three states of matter

The three states of matter is solid, liquid, gas.

3. Define matter. What is its composition?

Ans Anything that has occupies space and has mass. Matter is made up of molecules.

4 The molecules in a substance are in motion. What type of path follow?

Ans The particles in a substance are not at rest and they move randomly in all possible direction in a zig-zag path.

directions in a Zig-Zag paath.

Short answer Type question

1. How do the solids and gases differ in their following properties?

(a) Size

(b) Shape

(c) Density

1. one litre of water has 6.02×10^{26}. Estimat the size of molecule

Ans. The size of a partical or molecule of matter is very small. 1 litre of water has 6.02×10^{26} molecules, so the volume of a particale of water is -

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

Thus, the diameter of a water molecule is nearly 1.27×10^{-9} meter

2 What are the forces of cohesion and adhesion?

Ans (1) The force of cohesion is defined as the force of attraction between molecules of the same substance. The force of adhesion is defined as the force of attraction between different substances such as glass and water

· Short Answer type question

1. How do the solids, liquids and gases differ in their following properties?

(a) Size

(b) Shape

(c) Density

	solids	liquids	Gases
Size	They have definite size	Indefinite	Indefinite
Shape	They have definite shape	Indefinite	Indefinite
Density	Highly	Less denser than solid	less denser than liquids and gas

2. Describe a simple experiment to illustrate that molecules are not at rest but they constantly move.

Ans → Take a beaker. Fill it partly with water. Add some lycopodium powder in the beaker contents of the beaker with a glass rod. Take 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 microscop, it is found that the fine particles of lycopodium powder move rapidly in a random manner. ~~and their path is~~

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3. Distinguish between the three states of matter - solid liquid and gas on the basis of their molecular models.

Ans Solids:-

Here the molecules are very tightly packed that there is no very less intermolecular space and there is high intermolecular force of attraction.

Liquid:-

Here the molecules are less tightly packed as compared to solids and also there is lesser force of intermolecular attraction.

Gases:

Here the molecules are far apart from each other have the greatest intermolecular distance which result into the weakest intermolecular forces of attraction.

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Long answer type question

1. Write down the general properties of solids, liquids and gases.

Properties of solid :-

* Solid has a certain shape and size.
* it does not change its shape or size
* The particles are closely packed
* it had a definite volume and mass
* They are incompressible.

Properties of liquid :-

* They doesn't have a definite shape
* They have a definite volume
* They are almost incompressible
* They flow from higher to lower level.
* ex = water, juice, oil etc

properties of gas:-

* They are easy to compress
* they have low density
* ~~Th~~ ~~Th~~ ~~Th~~ indefinite shape and size
* They expand to fill their container
* ex = Hydrogen, oxygen, nitrogen etc.

2. Describe the molecular model for a liquid. How does it explain that a liquid has no definite shape, but has a definite volume?

Ans In a liquid the particles are still in close contact so liquids have a definite volume because the particales can move about each other a liquid has a no definite shape and takes a shape dictated by its container