

I n d e x

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Std. VI

Sec. C

Roll No.

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1.	9.7.21	CH-1-MATTER	1 to 4	

CH-1- MATTER

- 1) The molecules of each substance are identical.
A False
- 2) The inter-molecular forces are effective at all distances between the two molecules. False
- 3) ~~The molecules can move anywhere in space.~~
- 3) The molecules in a substance are in random motion. True
- 4) In a gas, the molecules can move anywhere in space. True
- 5) Liquids are less viscous than gasses. False
- Q. B) 1) All the molecular of a substance are identical
- 2) The inter-molecular spacing is least in solids more in liquids and still more in gasses.
- 3) The molecular motion in liquid ~~and~~ on and

gases is in Zig-Zag Path.

4) In a solid, the molecules vibrate on either side but they remain at their fixed positions.

5) The inter-molecular forces are the weakest in gases.

6) A solid exerts Pressure downwards on its base.

7) Gases are least dense.

8) Solids are most rigid.

Q1) The diameter of a molecule is approximately

Ans- iii) $10^{-10}m$

2) The inter-molecular forces are stronger in

Ans- i) Solids

3) The molecules

Ans- iii) In a solid, move freely within its boundary.

4) Solids are

Ans- i) more dense

5) The inter-molecular forces in liquid are

Ans- iii) weaker than in gases.

4) Column A

Column B

a) A molecule is composed of

b) Ice, water and water vapour.

c) An Atom

d) Gases

e) The molecules of a solid

i) does not exist free in nature (c)

ii) Can vibrate only up to about 10^{-10} m from their mean positions. (e)

iii) atoms (a)

iv) are the three states of water (b)

v) occupy space (d)

1. What do you mean by Matter?

Ans - Anything that has mass and occupies space is called Matter.

2. Name the three states of matter?

Ans - The three states of matter are:-

i) Liquid

ii) Solid

iii) Gas

3) What is a molecule?

Ans - A molecule is made up of two or more atoms.

4. Mention one example each of a monoatomic and a diatomic molecule.

Ans - Example of monoatomic molecule is Helium and example of

diatomic molecule is hydrogen.

5. What do you mean by inter-molecular spacing?

Ans - Intermolecular space - The space between any two consecutive molecules of a substance is called intermolecular space.

6. Describe a simple experiment to illustrate the existence of inter-molecular spacing.

Ans - Take 100 ml of water in measuring cylinder. Add 20 gm of salt in water gently and stir it well so as to dissolve the salt well in water. It is noticed that the level of water does not change. It shows that the particles of salt occupy spaces between the particles of water.

7. What do you mean by inter-molecular forces?

Ans - Intermolecular force of attraction - The force of attraction between the molecules (like molecules or unlike molecules) is called inter-molecular forces.

8. What are the forces of cohesion and adhesion?

Ans - The forces of attraction between the molecules of similar kind is called force of cohesion.

EX - When a glass filled with water is emptied some water particles remain stuck to the glass due to the adhesion between water molecules and glass.

9) State three characteristics of molecules of matter.

Ans - They are very small in size.

They have spaces between them.

They always attract each other.

They are in constant random motion.

10) How do solids, liquids, and gases differ in their properties?
a) size b) shape c) density

10) How do solids, liquids and gases differ in their a) size b) shape c) Density

Matter	Solids	Liquids	
Size	They have definite size	Indefinite	Indefinite
Shape	They have definite shape	Indefinite	Indefinite
Density	Highly dense	Less denser than solids	Less denser than solids

11) The molecules in a substance are in motion. what type of path do they follow?

Ans- The Particles in a substance are not rest (in motion), and they move randomly in all possible direction in a zig-zag path.

12) 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 containing water. stir the contents of the beaker with a glass rod. Take out few drops of this suspension on a glass plate through a microscope.

Place it on the table and illuminate it with a table lamp. Observe the glass plate through a microscope. It is found that the five particles of ~~the~~ lycopodium powder move rapidly in a random manner and their path is zig-zag. ~~as shown in figure below.~~

13. Write down five general properties of solids, liquid and gases.

Ans - Solids :-

- i) They are good conductors of heat.
- ii) They are ~~generally~~ generally hard and rigid.
- iii) They have a definite shape and ~~rate~~ volume.
- iv) The molecules here are very tightly packed having negligible or very very less inter-molecular space.
- v) They have the strongest intermolecular force of attraction.

Liquids

i) Molecules are less tightly packed. having negligible or very less intermolecular space.

They have the strong:

ii) The intermolecular force of attraction is less than that of solids.

iii) The molecules here can move from one place to ~~into~~ another.

iv) A Particular quantity of a liquid has a definite volume at a given temperature.

v) Do not have any particular shape of their own and thus acquire the shape of the vessel.

Gases

i) The force of attraction between the molecules is the least.

ii) The inter-molecular space is the largest.

- iii) Neither have a definite shape nor a definite volume.
- iv) The molecules move independently.
- v) worst conductors of heat.

14) Give the molecular model for a solid and use it to explain why a solid has a definite volume and a definite shape.

15) Describe it.

Solid:-

Ans- Here the molecules are very tightly packed that there is no or very less intermolecular space and there is high intermolecular force of attraction (force of cohesion). The molecules do not move about their mean position and thus solids have a definite shape and volume.

a definite shape but acquire they have a volume.

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

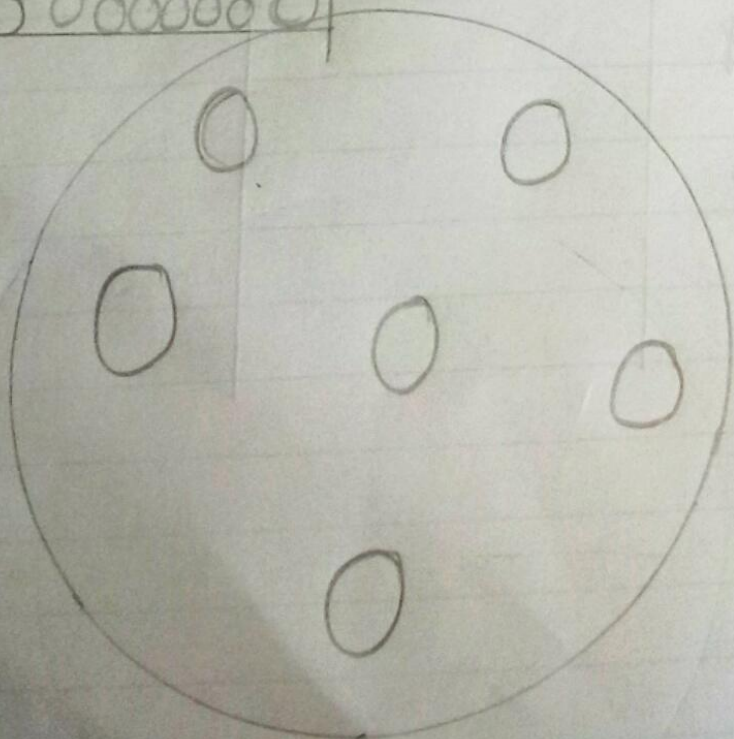
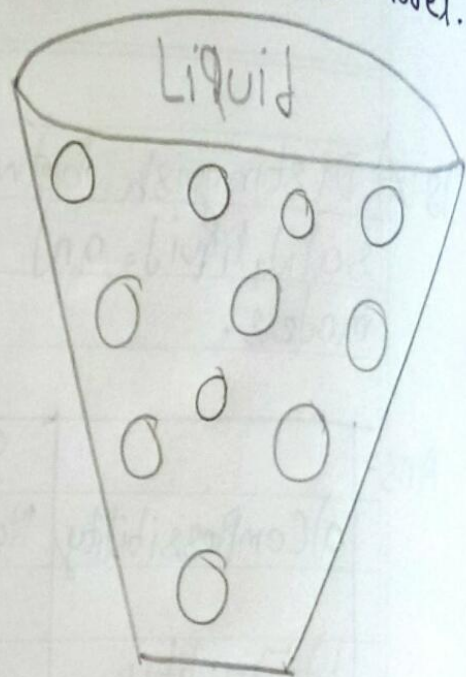
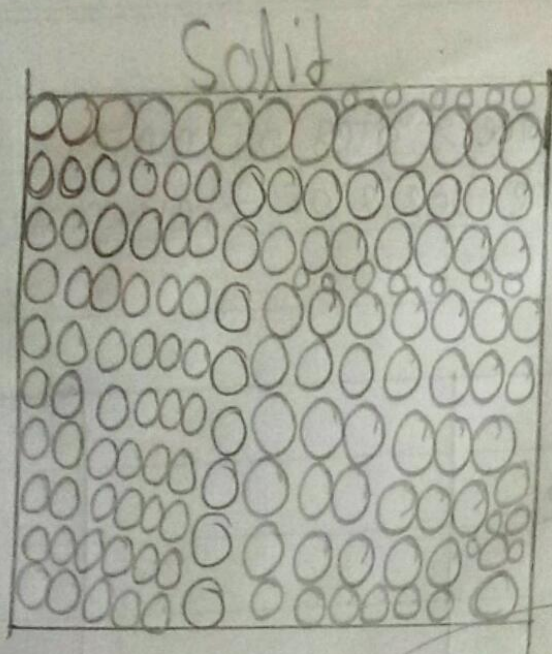
Ans- Here the molecules are less tightly packed as compared to solids and also there is lesser force of intermolecular attraction. The intermolecular distance is greater than that in the solids. ~~the~~ Thus they have a definite shape but acquire the shape of the vessel.

16) A gas neither a definite volume nor a definite. Describe the molecular model to explain it.

Ans- Here the molecules are far apart from each other. i.e. have the greatest intermolecular distance which result into the weakest intermolecular forces of attraction. The molecules as are not bound by any strong force move about freely and thus gases

17) Distinguish between the three states of matter
Solid, liquid, gas on the basis of their mole-cule model.

Ans-



→ Gas

Distinguish between solids, liquids and gases on the basis of their following Properties:

- a) compressibility b) fluidity c) rigidity d) expansion on heating.

8- a) Compressibility	Not compressible	Negligibly compressible	Highly compressible
b) Fluidity	Not possible	Can flow	Can flow
c) Rigidity	Highly rigid	More than	Not Rigid
d) expansion on heating	Low	More than Solids	More than Liquids

What do you mean by change of state into liquid at a constant temperature? Explain?

The change of a solid into a liquid at a constant temperature, and

b) the change of a liquid into a gas at a constant temperature?

Ans-a) The Process of change of a substance from solid state to its liquid state on absorption of heat at a particular temperature, called the melting point, is called melting.

b) The Process of change of a substance from a liquid state to its gaseous state at a particular temperature, called the boiling point.

