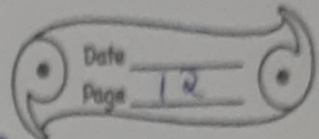


HW

14/5/21

Matter & its Composition



1Q- What are the five basic elements of which matter is made up of according to the ancient philosopher?

ans- The five elements of which matter is made up of according to ancient philosophers are Prithvi (Earth), Jal (Water), Vayu (Air), Agni (Fire) and Aakash (Space).

2Q- What do you understand by the term matter? Give examples.

ans- Matter is something that has mass, occupies space and can be perceived by our sense organs. Examples - book, chair, pencil and everything around us is matter.

3Q- Give one point to differentiate an atom and molecule.

ans-	Atoms	Molecule
i)	An atom is a smallest possible	A molecule can be formed of atoms of

unit of matter that exhibits all the properties of that matter

the same kind or different types of atoms.

4q- Write the characteristics of particles of matter.

ans- The characteristics of particles of matter are :-

i.) The particles of matter are very, very, small.

ii.) They have space between them

iii.) The particles of matter are constantly moving.

iv.) The particles of matter attract each other.

5q- Differentiate between solid, liquid and gas.

ans-	Solids	Liquids	Gases
Volume	i.) They have a definite volume, as intermolecular forces between the constituent particles are very strong.	i.) i.) They have a definite volume, as intermolecular forces between the constituent particles are strong.	i.) They have no definite volume, as intermolecular spaces between the constituent particles are weak.
Diffusion	ii.) Can diffuse into liquids.	ii.) Diffusion is higher than liquids.	ii.) Highly diffusible as particles move randomly with high speed.
Compressibility	iii.) Negligible	iii.) Negligible	iii.) High
Rigidity or Fluidity	iv.) Very Rigid and don't flow easily.	iv.) Less rigid and can flow easily.	iv.) No rigidity and can flow easily.
Density	v.) High	v.) Moderate	v.) Low

Solids

Liquids

Gases

Shape vi.) They have a definite shape.

vi.) They don't have a definite shape and take the shape of the container they are poured into which.

vi.) They don't have a definite shape.

Kinetic Energy at temperature vii.) Least energy

vii.) Higher than solids

vii.) Maximum Energy

Inter-particle space viii.) Least

viii.) Lesser

viii.) More than others.

Inter-particle force of attraction

ix.) Very Strong

ix.) Less strong

ix.) Weak

Intermolecular forces

x.) Strong enough to hold the constituent particles in fixed positions.

x.) Strong enough to hold the constituent particles in aggregation within the bulk but not in fixed positions.

x.) Extremely low, so that the constituent particles are free to move in a continuous random motion.

Arrangement of molecules	Solids	Liquids	Gases
	xi) Packed in a definite pattern so they possess a definite	xi) Packed weak in comparison to solids, shape not fixed.	xi) Packed very poorly so that they fill the container, no definite shape.

6Q- Define Sublimation. Name any two materials that sublimes.

ans- The process of changing solid directly into gas and gas directly into solid is called sublimation. Example - Dry Ice & Carbon Dioxide.

7Q- What do you mean by interconversion of the states of matter? Mention the factors that caused the inter-conversion.

ans- The process by which matter changes from one state to another

and back to original original form, is called interconversion of states of matter.

Q. The factor that cause inter-conversion are :-

- i.) Change in Pressure
- ii.) Change in Temperature.

Q. What do you mean by Fluids? Give Examples.

ans- Substances that can flow are known as Fluids. Ex- gases (oxygen, carbon dioxide), liquid (water, petrol) etc.

- a.) Condensation
- b.) sublimation
- c.) Fluids

10a.) When a teaspoon of sugar is added to 100 ml water it doesn't increase its volume

ans- The sugar ~~ers~~ crystals, occupy the intermolecular spaces, present between the water molecules. Hence, there is no appreciable increase in the water level.

b.) A sponge can be ~~com~~ compressed even though it is a solid.

ans- A sponge can be compressed easily even though it a solid because they have minute pore in it which are filled with air.

13Q- What do you mean by Mass? How does it differ from the weight of an object?

ans- Mass is the amount of matter ~~ino~~ in an object. It is different from weight because weight is the force ~~ext~~ exerted on an object by gravity.

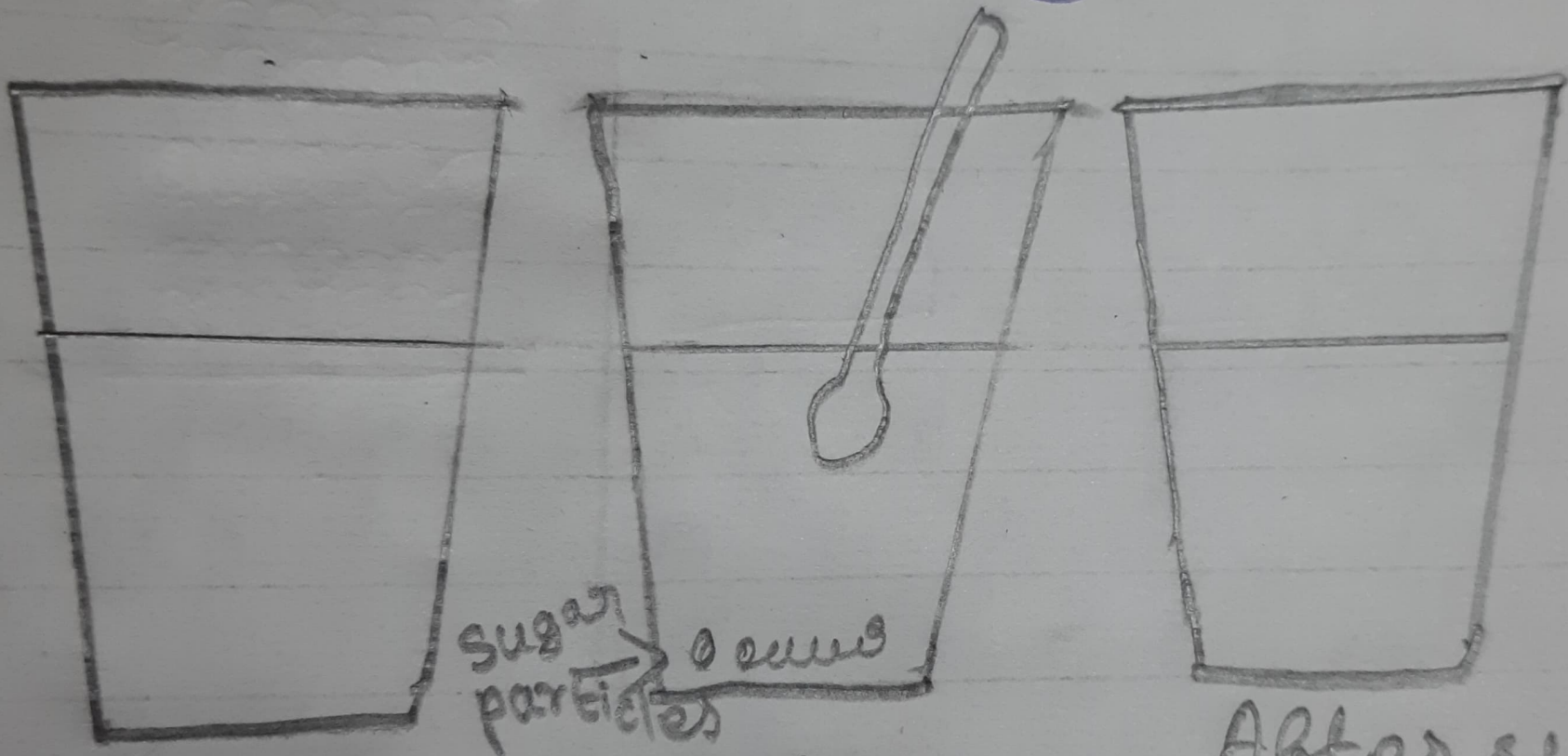
14Q- What do you mean by intermolecular force of attraction? How does it vary with reference to the solids & gases?

ans- The force of attraction between the molecules of matter is called intermolecular force of attraction. It is ~~maximum~~ in maximum in li. solids & least in gases.

15Q- Expand LPG. Mention it's use.

ans- LPG is Liquefied petroleum gas. It is used as heating fuel in heating, cooking and automobile appliances etc.

Particles have space
between them



Before
sugar
is added

While
sugar
was getting
added

After sugar
is added

11.7 Explain by an activity to show that particles of matter have space in between them. Draw labelled diagram in support of your answer.

ans- Aim - To prove that particles have space ~~betw~~ between them

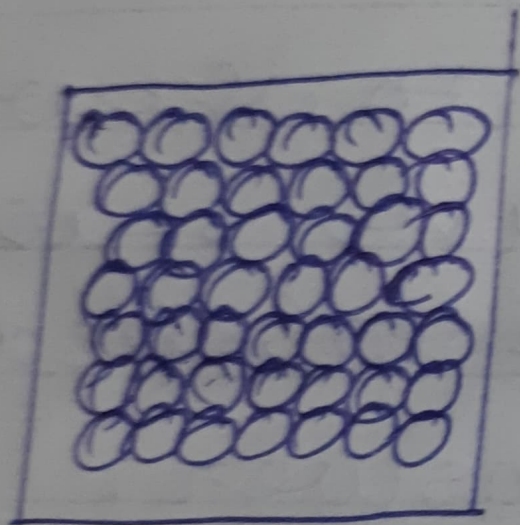
Materials required - To A glass, a spoon, teaspoon of sugar

Procedure - ~~First~~, We have to add the sugar in the glass of water & stir it.

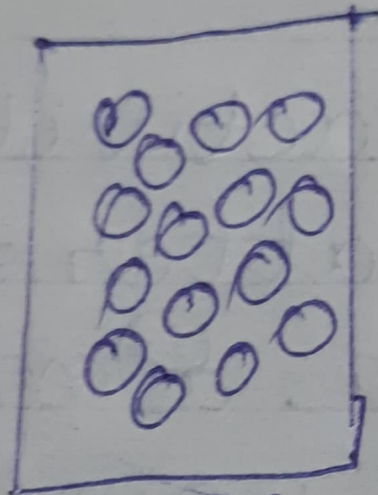
Observation - We will observe that ~~the~~ there is no rise in the water level. ~~This show~~ ~~the~~ When sugar is added to the water, the sugar particles adjust themselves in the space between the water particles.

Conclusion - Hence, it is proven that particles of matter have space between them.

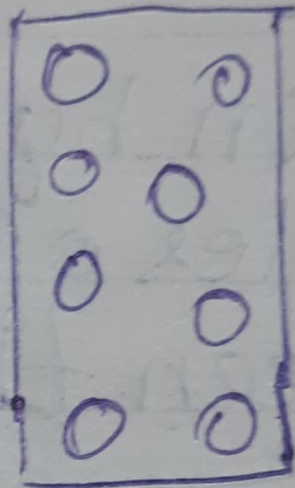
Particles of Matter attract each other



Coin



Rubber Band



Chalk

12) Show by an activity that particles of matter attract each other.

ans - Aim - To prove that particles of matter attract each other

Materials required - A chalk, A coin and a rubber band

Procedure - We will try breaking them by hammering, ~~hammering~~, cutting or stretching.

Observe - We will observe that it is more easier to break the chalk, less easier to break the rubber band and most difficult to break the coin. This is because ~~the coin~~ the particles of coin are held together with ~~or~~ greater force than rubber band or chalk.

Conclusion - Hence, it is proven that particles of matter attract each other