Assignment

Matter

1) Define the following

a) Matter : ~~Matter is something that occupies~~

Ans) Matter is something that has mass, occupies space and can be perceived by our sense oregans.

b) Diffusion:

Ans) The intermixing of two or more substances due to the motion of their particles in order to get a uniform mixture is called diffusion.

c) Intermolecular force of attraction :

Ans) There exsist a force of attraction between the particles of matter which are known as intermolecular force of attraction.

2) What do you mean by Kinetic Theory of Matter ?

Ans) The theory stating that any substance whether solid, liquid or gas is made up of tiny particles called ~~matter~~ atoms, molecules or ions which are in constant motion is called Kinetic Theory of Matter.

3) Write the postulates of Kinetic Theory of Matter

Ans) The main postulates of Kinetic Theory of Matter are

* Matter is composed of very small particles called atoms and molecules.

* The constituent particles of a kind of matter are identical in all respects.
* These particles have spaces or gaps between them which are known as interparticular or intermolecular spaces.
* There exist a force of attraction between the particles of matter which hold them together. This force of attraction is known as interparticular or intermolecular force of attraction.
* Particles of matter are always in a state of random motion and possess kinetic energy which increases with an increase in temperature and vice-versa.

4) What happens when :-

a) Water is kept in a deep freezer.

Ans) When water is kept in a deep freezer, it gets cooled and change into ice at 0°C. ice

water $\xrightarrow[\text{Freezer}]{\text{deep}}$ ice (0°C)

b) Water is heated

Ans) Water on heating changes into steam at 100°C

water $\xrightarrow{\text{heating}}$ steam (100°C

5) What do you mean by solids. Give some examples

Ans> A solid has a definite shape and a definite volume. Ex - wood, stone, iron, ice etc.

6) Explain the interconversion of state of matter with example.

Ans> The pheromenon of change of one state of matter into another and then back to the orcigical state, without any change in its chemical composition is called interconversion of the states of matter. Example : a candle wax. When candle is burnt, the solid wax melts into liquid wax. On cooling, the molten wax again changes back into solid wax.

Solid wax $\underset{\text{Cool}}{\overset{\text{Heat}}{\rightleftharpoons}}$ Liquid wax

7) What is sublimation? Metion any two substances that sublimates?

Ans> Substances that directly change from the solid state to gaseous state without passing through the liquid state. This prevcess is called sublimation. Ex > camphor, naphthalene.

8) Give reason why :-

a) Liquids are called fluids :-

Ans) In liquids, intermolecular force is weaker because the particles are not closely packed and hence there is a large intermolecular space. So molecules in liquid can move randomly and they can easily flow. Hence liquids are called fluids.

b) Solids have a definite shape.

Ans) In solids, the intermolecular spaces are negligible and the atoms move about in their own position which gives solid a definite shape and makes them rigid.

9) What are the characteristics of particles of matter.

Ans) The characteristics of particles of matter are

* Particles are very small in size.
* Particles of matter have interparticle space between them.
* ~~Particles of matter have interparticle space~~
* The particles of matter are in constant random motion.
* Particles of matter attract each other.

10) Explain by an activity that the particles of matter are small in size.

AIM: To show that particles of matter are very small.

Materials required: 4 beakers, water, two or three crystals of blue viteral.

Procedure:

Dissolve two or three crystals of blue viteral in a beaker in about 10 ml of water to get clear transparent blue solution. Take four beakers and label them as A, B, C and D. Fill each beaker with 50 ml of water. Now transfer 5 ml of solution to beaker A and stir it properly to get a uniform blue colour. Take 5 ml of solution from beaker A and transfer it to beaker B and stir well. Again transfer 5 ml of solution from B to C and then from C to D.

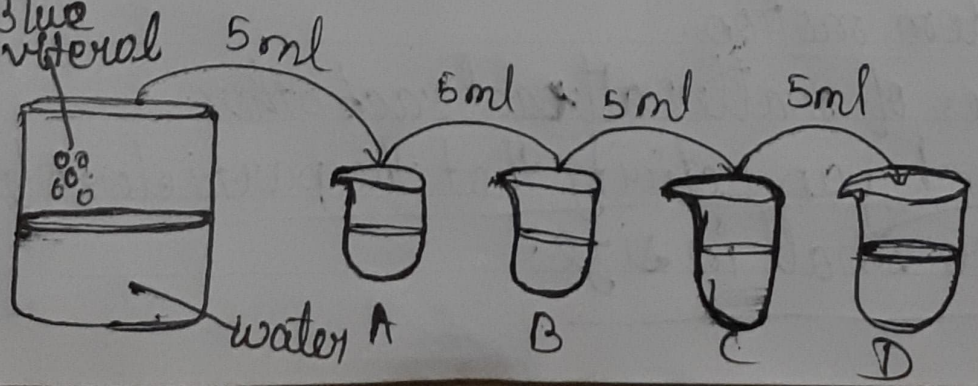
Observation:

The solutions in all the beakers are coloured though they become fainter due to successive dilution.

Conclusion

Thus it is concluded that a small crystal of blue viteriol contains a very large number of tiny particles which show all the properties of the substance.

The whole process can be repeated for pottassium permanganate crystals or ink to prove the nature of a particle.

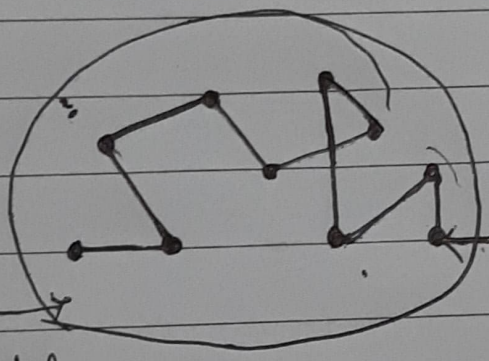


11) Explain the Brownian motion with an example.

Ans→ The haphazard random motion of suspended particles on the surface of a liquid or in air is called brownian motion.

* This was first noticed by Robert Brown.
* It gives the evidence for the existance and
* movement of the particles in liquids

Ex: → movement of pollen grain in water.



Invisible moving of particles of matter.

12) Explain what changes will take place when few pieces of marbles are added to beaker containing water.

Ans→ It will produce a white precipitate of calcium Bi carbonate.