

Home Assignment

Q1) Define the following.

a) Matter

b) Diffusion

c) Intermolecular force of attraction

Ans → a) Matter is anything which has mass, occupies space and can be perceived by our senses.

b) The intermixing of two or more substances due to the motion of their particles in order to get a uniform mixture is known as Diffusion.

c) The particles of matter exert a force of attraction in between them is known as the intermolecular force of attraction.

Q2) 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 atoms, molecules or ions which are in constant motion is known as the "Kinetic Theory of Matter".

Q3) Write the postulates of the Kinetic theory of matter.

Ans → The postulates of the Kinetic theory of matter are:-

- i) Matter is composed of very small particles called atoms and molecules.
- ii) The constituent particles of a kind of matter are identical in all respects.
- iii) These particles have spaces or gaps between them which are known as interparticular or intermolecular spaces.
- iv) There exists a force of attraction between the particles of matter which holds them together. This force of attraction is known as interparticular or intermolecular force of attraction.


v) 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.

Q4) What happens when:-

a) Water is kept in a deep freezer.

Ans → When water is kept in a deep freezer, the gets cooled and it converts into ice. The process applied here is freezing.

b) ~~Water~~ Water is heated.

Ans → When water is heated, the water converts into water vapour. The process applied here is  Evaporation.

Q5) What do you mean by solid? Give some examples.

Ans → A solid has a definite shape and a definite volume.
For example → Wood, bone etc.

Q6) Explain the interconversion of the state of matter with examples.

Ans → The phenomenon of change of one state of matter into another and then back to the original state, without any change in its chemical composition is called interconversion of the states of matter.

The change in the state of matter is caused by :-

i) Change in temperature

ii) Change in pressure

→ Change of state of matter by changing the temperature

i) When a substance in solid state is heated, it changes into liquid state after some time. On further heating, the liquid changes into gaseous state.

ii) For example → Water is a liquid under ordinary conditions but when it is kept in a deep freezer, it gets cooled and changes into ice at 0°C . Ice when kept at room temperature, again changes back into liquid water.

→ Change of state of matter by changing the pressure

i) A gas can be changed into a liquid, and then into solid, by cooling it and by increasing its pressure.

ii) For example → Air contains mostly nitrogen and oxygen gases. When pressure is increased and temperature is decreased, air changes into its liquid state.

Q7) What is sublimation? Mention any two substances that sublime.

Ans → The process by which certain substances change directly from solid to gaseous state on heating is called sublimation.
For example → Camphor, ammonium chloride.

Q8) Give reason why :-

a) Liquids are called the fluids.

Ans → Liquids are called the fluids because liquids can flow anywhere.

b) Solids have a definite shape.

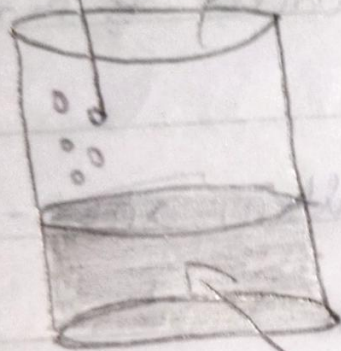
Ans → The intermolecular force of attraction is very strong and the intermolecular space in solids is almost negligible. So, ~~the~~ solids have a definite shape.

Q9) What are the characteristics of the particles of matter?

Ans → The characteristics of the particles of matter are:-

- i) They are very small in size.
- ii) They have intermolecular space between them.
- iii) They are in constant random motion.
- iv) They attract each other.

Blue Vitriol



Water

Small



Smaller



Smallest



Smallest



PARTICLES OF MATTER ARE
VERY SMALL IN SIZE

Q10) Explain by an activity that the particles of matter are small in size.

Ans → Aim → To show that the particles of matter are small in size.

Materials required → Four Beakers, Blue vitriol

Procedure

- Four beakers are taken and labelled as A, B, C, D. 50ml of water is filled in each beaker.
- 5ml of solution is transferred to beaker A and it is stirred properly to get a uniform blue colour.
- 5ml of solution is then transferred from Beaker A to Beaker B and it is stirred well.
- 5ml of solution is again transferred from Beaker B to Beaker C and Beaker C to Beaker D.

Observation

We can see that the solutions in all the beakers are coloured though they become fainter due to successive dilution.

Conclusion

The small crystals of blue vitriol contain a very large number of tiny particles which show all the properties of the substance.

Q11) Explain Brownian motion with an example.

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

ii) Robert Brown gave the evidence for the existence and movement of particles in liquids.

iii) For example → When we put pollen grains in water we can see that the pollen grains are moving in an irregular manner because they collide with the moving particles of water.

Q12) Explain what changes will take place when few pieces of marbles are added to beaker containing water.

Ans → The changes will take place when few pieces of marbles are added to beaker containing water are that we can see that the particles of marble will flow on the surface of water and this shows that the particles of matter are in constant random motion which is known as the Brownian motion.