12.1.22

Camlin | Page
Date / /

Q1 What is matter? What is it composed of?

Ans Anything that has mass, occupies volume and can be felt by our senses. It is composed of molecules.

2, Name the three states of matter and distinguish them on the basis of their

i, Volume -
Solid - have a definite volume
Liquid - have a definite volume
Gas - have no definite volume

ii, Shape -
Solid - He have a definite shape
Liquid - doesn't have a definite shape
Gas - doesn't have shape.

3, a, Arrangement of molecules.
Liquid - closely packed little loose packed
Gas - very loosely packed

b, Inter-molecular separation
Liquid - low intermolecular space
gas - Maximum intermolecular space

c) Inter-molecular force
liquid- Maximum molecular force
gas- Least molecular force

d) Kinetic energy of molecules
liquid- Least kinetic energy
gas- maximum kinetic energy

4) What is evaporation? Explain in on the basis of molecular motion.

Ans) The change of liquid into its vapour at all temperatures from its surface is called evaporation.

Molecules of liquid have more spaces, the less molecular force of attraction and more K.E than molecules of solids and can move through the liquid.

while moving they can not escape the surface as they are being pulled inside by other molecules as there are no molecules above the surface.

But when some molecules acquire sufficient K.E (Threshold velocity), they overcome the attractive forces of other molecules and escape into the open space above the liquid. These escaping molecules form the vapour of

the liquid and the process called evaporation continues till all the liquid evaporates.

5) Do all the molecules of a liquid take part in evaporation? If not, explain your answer.

Ans, No, all the molecules of the liquid do not take part in evaporation only those molecules near the surface of the liquid which acquire sufficient kinetic energy escape as they overcome attractive forces of other molecules. Then other molecules come to the surface of the liquid and acquire more K.E. and escape the surface. This continues till all the liquid evaporates.

6) No heat is supplied to a liquid during evaporation. How does then the liquid change into its vapour?

Ans, Though no heat is supplied to the liquid. molecules near the surface of the liquid acquire sufficient kinetic energy by collisions with other liquid molecules and with this K.E. they overcome the attractive forces of other molecules and change into vapours.

During evaporation, particles of water absorb heat from the surroundings to change their state. The particles at the surface absorb more heat and change into vapour.

7) Comment on the statement 'evaporation is a surface phenomenon'.

Ans, Change of liquid into vapours at all temperatures from the surface is called evaporation. Evaporation takes place at the surface in those molecules which are at the surface and have sufficient K.E to overcome attractive force due to inner surrounding molecules.

8) Why is cooling produced when a liquid evaporates?

Ans, For changing liquid into vapours heat is needed this heat is taken from the containes or surroundings and temperature of container or body itself fall and cooling is produced

9/b) Surface area of liquid is increased.

Ans, ~~Surface~~ On increasing the area of the surface, number of molecules escaping out from the surface increases

9 temperature of liquid in increased.

Ans, Increase in temperature increases kinetic energy. More molecules come to the surface of liquid hence the rate of evaporation will increase with the increase in temperature

10, What is boiling? Explain it on the basis of molecular motion.

Ans, The change of liquid to vapours on heating at a constant temperature is called Boiling. More the speed of molecules more is the Kinetic energy.

Heating of the liquid increases the average kinetic energy of liquid molecules acquire sufficient K.E needed to overcome the force of attraction of other molecules.

These molecules start leaving the liquid not only at the surface but also near the walls of the containing vessel and bubbles are seen on the walls of the vessel.

This causes the agitation in the whole of the liquid and this is called boiling.