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Exercise

B. 1. What is matter? What is it composed of?

A) Matter is any substance which occupies space and mass. It is composed of tiny particles.

2. Name the three states of matter and distinguish them on the basis of their i) volume, and ii) shape

A)

Solid	Liquid	Gases
Solid has a definite shape and volume.	Liquid ha a definite volume but a definife & shape.	Grases has neithes a definite volume nor shape.

3. Distinguish between liquid and vapour (gas) states of matter on the basis of the following factors: a) Arrangement of molecules
b) Inter-molecular separation
c) Inter-molecular force, and
d) Kinetic energy of molecules

A)

In liquids, molecules are far from each other.	In Gases, molecules are set freely.
• Inter-molecular separation is greater than solids.	• Inter-molecules separation is father.

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

A→ During evaporation, the molecules on the surface which have sufficient kinetic energy to do work against the force of attraction on them due to other molecules inside the liquid escape out from the surface into space. These escaping molecules form the vapour of the liquid. The process continues till all the liquid evaporates.

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

A→ No, all the molecules of a liquid take part evaporation because evaporation is a surface phenomenon

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

A→ Even though no heat is supplied to a liquid during evaporation, still it changes into vapour because of the heat around the liquid. The liquid absorbs the heat from its surroundings and changes into vapour

8. Why is cooling produced when a liquid evaporates?

Ans In the process of evaporation, a liquid changes to vapour and for this purpose some heat is needed. As in the evaporation, no external heat is supplied, the molecules take the heat from it surroundings and therefore it gets cooled.

9. Give reason for the increases in rate of evaporation of a liquid when

a) air is blown above the liquid.

When air is blown above the surface of a liquid, the rate of evaporation increases. The reason is that the blowing air takes away with it the molecules of the liquid escaping out its surface. To take their place, other molecules move to the surface

the liquid.

b) Surface area of liquid is increased.

A→ On increasing the area of surface exposed to air, the rate of evaporation increases. The reason being that on increasing the area of surface, no. of molecules escaping out from the surface increases.

c) Temp. of liquid is increased.

A→ The rate of evaporation increases in temp. of liquid. The reason is that the energy of the molecules increases with increase in temp. So, more and more molecules come towards surface, hence evaporation will increase with increase in temp.

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

A→ In boiling at a fixed temp. by absorbing heat from external source, all molecules throughout liquid acquire sufficient kinetic energy by collisions with to overcome the force of attraction of other molecules, so they escape out from the liquid in form of vapour.