

Board – ICSE

Class – 8<sup>th</sup>

Topic – Matter

1. Differentiate between the following:

Solids and liquids

**Answer:**

| Solids  | Liquids  |
|---|--|
| The molecules are very tightly packed.  | The molecules are less tightly packed than solids.                               |
| They have a definite shape and volume due to the fixed position of molecules. | They have a definite volume at a particular temperature but not a definite shape |
| The intermolecular forces are strong.   | The intermolecular forces are not so strong.                                     |

2. Write any six characteristics of matter and its constituent particles.

**Answer:**

Matter and its constituent particles have the following characteristics:

- Matter is made up of tiny particles known as atoms which consist of three particles called protons, electrons and neutrons.
  - Protons carry a positive charge (+), electrons carry a negative charge (–) and neutrons carry no charge, i.e. it is electrically neutral. The charges on protons and electrons are equal and opposite.
  - The central part of the atom which consists of protons and neutrons is called nucleus. Electrons revolve around the nucleus in circular paths called orbits or shells.
  - Electrons present in the outermost orbit are called valence electrons which can be easily removed or transferred from an atom. Hence, they are also called free electrons.
  - Bodies are charged due to the transfer of electrons.
  - The number of protons in an atom is equal to the number of electrons and the total positive charge in it is equal to the total negative charge which shows that an atom is electrically neutral.
3. Give three observations in our daily life where the principle of evaporation produces cooling.

**Answer:**

Following are some daily life observations where the principle of evaporation produces cooling:

- i. During summer, we use earthen pots to get cool water.
  - ii. A desert cooler blows cold air.
  - iii. On a hot day, we feel relieved under a fan after perspiring
4. State any three assumptions of the kinetic theory

**Answer:**

The assumptions of kinetic theory are as follows:

- i. Molecules are in a state of continuous motion and hence they possess kinetic energy.
  - ii. The kinetic energy of molecules increases with increase in temperature and decreases with decrease in temperature.
  - iii. Molecules of matter always attract each other and this force is known as intermolecular force of attraction. iv. The force between molecules of similar kind is called force of cohesion and that between dissimilar molecules is called force of adhesion
5. A gas can be easily compressed. Give reason:

**Answer:**

Molecules of gases are very far apart and there is a lot of empty space between them. So a gas can be easily compressed.

6. Give two applications of evaporation

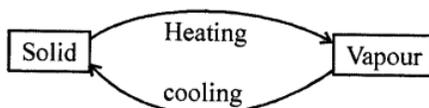
**Answer:**

Two APPLICATIONS OF EVAPORATION:

- (i) When we sprinkle water on the roads in summer evening, water evaporates by taking heat from the road and produces coolness in the surroundings and it becomes pleasant.
  - (ii) After taking a bath in summer when we come out of water, water evaporates taking heat from our body. The temperature of body falls and we feel refreshed
7. What do you mean by sublimation ? Explain with an example.

**Answer:**

SUBLIMATION : "Change of solid state of matter directly on heating to vapour state (without becoming liquid) and on cooling vapours to solid is called sublimation



Substances are Dry ice, Napthalene balls (Moth balls), Iodine, Ammonium chloride ( $\text{NH}_4\text{Cl}$ ) etc.

8. State three factors which affect the rate of evaporation of a liquid.

**Answer:**

Three factors on which affect the rate of evaporation of a liquid:

- (i) area of exposed surface.
- (ii) temperature of liquid.
- (iii) nature of the liquid.
- (iv) presence of humidity.

9. State (a) the melting point of ice, and (b) the boiling point of water.

**Answer:**

(a) MELTING POINT OF ICE: "Is the constant temperature at which it starts (melting) changing from ice to water."

It is  $0^\circ\text{C}$  for ice.

(b) BOILING POINT OF WATER : "Is that constant temperature at which water starts (BOILING) changing from water to steam (vapours)".

It is  $100^\circ\text{C}$  for water.

10. Which of the following are correct?

True.

Reason As the molecules here have negligible intermolecular distance between them and have maximum intermolecular force of attraction.

True.

False

Correct Gases have neither definite volume nor a definite shape.

False.

Correct Liquids have a definite volume but not definite shape.

11. State three properties of molecules of a matter

**Answer:**

- i. They are very small in size.
- ii. They have spaces between them.
- iii. They are in constant motion and they possess kinetic energy.

12. Differentiate between melting point and boiling point, giving at least one example of each.

**Answer:**

**MELTING POINT:**

The temperature at which a solid starts changing into LIQUID without further increase in temperature is called MELTING POINT.” Or The constant temperature at which a solid changes into liquid.”

Example : Ice (solid) melts at  $0^{\circ}\text{C}$  into water (liquid) when heated.

**BOILING POINT :** “The temperature at which a LIQUID start changing in vapour without further rise in temperature.

Or

‘The constant temperature at which a LIQUID starts changing into GAS (vapours)

Example : Boiling point of water (liquid) is  $100^{\circ}\text{C}$ .