

DON BOSCO SCHOOL, KOKAR, RANCHI

CLASS – 8 (CHEMISTRY)

CHAPTER -1

MATTER

A. Short answer and questions

1.What are the three states of matter?

Ans- The three states of matter are solid, liquid and gas.

2. Arrange solids, liquids and gases in order of increasing intermolecular space.

Ans- Gases, liquids and solids.

3. Arrange solids, liquids and gases in order of increasing intermolecular force.

Ans- Solids, liquids and gases.

4. What will happen to the kinetic energy of a particle if it is heated?

Ans- The kinetic energy of a particle increases if it is heated.

5.What gives rise to the pressure of the gas?

Ans- The collision of the particles with the walls of the vessel gives rise to the pressure of the gas.

6. In which state of matter do the particles move the longest distances?

Ans- Gaseous state the particles move the longest distances.

B. Long answer question:

1.Explain the melting of a solid on the basis of the kinetic theory.

Ans- As a solid is heated, the kinetic energy of the particles increases. With rising temperature, the particles vibrate more and more vigorously till they move away from their fixed positions at a particular temperature. Thus, a solid becomes a liquid.

2. Explain the evaporation of a liquid on the basis of the kinetic theory.

Ans- As the temperature is raised, the kinetic energy of the particles increases and the impact of the collision becomes greater, leading to faster evaporation of liquid. At the boiling point of liquid, the KE of the particles is so great that all the particles tend to escape. Thus, a liquid changes to gas.

3. Explain the liquefaction of gas on the basis of the kinetic theory.

Ans- As the temperature is lowered, the KE of the particles is also lowered. When low energy gaseous particles collide with each other, they may form bigger clusters, and the gas may condense into liquid.

4. Explain the freezing of a liquid on the basis of the kinetic theory.

Ans- As liquid is cooled, the KE of the particles reduces. The particles move shorter and shorter distances as the temperature is lowered. At the freezing point, the translational motion of the particles ceases and the particles get rigidly fixed in their positions. This is how liquid changes into solid.

5. State the law of conservation of mass.

Ans- Matter can neither be created nor destroyed but can be changed from one form to another and the total mass of the substances before and after the change remains the same.

6. Describe an experiment which proves the law of conservation of mass.

Ans- Experimental support to the law of conservation of mass:

Landolt placed solutions of two substances, which could react with each other, in the two limbs of an H-shaped tube. The substances were so chosen that too much heat was not given out on reaction, (e.g., silver nitrate and iron (II) sulphate) such that any change in evolution of heat could be neglected. The two limbs were sealed and the sealed tube was weighed. The tube was then tilted and shaken so that the two substances came in contact with each other. A black solid separated in the tube to indicate that the chemical change had taken place. The tube was cooled to room temperature and weighed again. There was no change in the weight of the tube showing that the mass was conserved.

C. Fill in the blanks:

(Answers: 1. Higher 2. Large 3. Weakest 4. Increases 5. Decreases)

1. Evaporation of liquid is faster _____ temperature.
2. A gas is compressed easily because of its _____ intermolecular space.
3. Among ice, water and steam, the intermolecular force is the _____ in steam.
4. The intermolecular space in a substance _____ with increasing intermolecular force.
5. The kinetic energy of a particle _____ on cooling.

D. True or false:

Answers: 1. False 2. True 3. False 4. True 5. True 6. False

1. A liquid does not evaporate below its boiling point.
2. The collision among the particles in a liquid causes it to evaporate.
3. When a substance is heated, the kinetic energy of the particles decreases.
4. When a solid is heated, its particles vibrate more vigorously.
5. There is practically no decrease in the total mass of the substances in a chemical reaction.
6. Burning does not obey the law of conservation of mass.

Assignment:

1. Write all short and long answers in your copy and learn it.
2. Learn fill in the blanks.