Chapter-1 MATTER

SUB TOPIC: Composition of matter and tininess of Particles . Properties of particles of matter

VERY SHORT QUESTIONS: (1 MARK)

- The quantity of matter present in an object is called its –
  - Weight (B) Gram (C) Mass (D) Density
- The metal which is liquid at room temperature –
  - Sulphur (B) Sodium (C) Silver (D) Mercury
- At higher altitudes –
  - Boiling point of a liquid increases (B) Boiling point of a liquid decreases
  (C) No change in boiling point (D) Melting point of solid increases
- The boiling point of alcohol is 78°C. What is this temperature in Kelvin scale– (A) 373 K (B) 351 K (C) 375 K (D) 78 K
- In which phenomena water changes into water vapour below its B.P. –
  - Evaporation (B) Condensation (C) Boiling (D) No such phenomena exist
- The boiling point of water on celsius and Kelvin scale respectively is :

  (A) 373, 273 (B) 0, 273 (C) 273, 373 (D) 100, 373

(B) SHORT ANSWER TYPE QUESTIONS (3 MARKS)

- Define matter. Give four examples of matter.
- Name the three states of matter. Give one example of each.
- What are the two ways in which the physical state of matter can be changed ?
- Draw the 'states of matter triangle' to show the interconversion of states of matter.
- Explain how gases can be liquified ?
- What is sublimation ? Give examples.

a. Angle of incidence

b. Angle of reflection

LONG ANSWER TYPE QUESTIONS :(5 MARKS)

Describe any one of the following activities to show :

a) Particles of matter have inter-molecular spaces among them

b) They attract with a strong forces of attraction.

c) Particles always remain in a continuous motion.

sub topic- Different States of matter and inter-conversion

I. VERY SHORT QUESTIONS: (1 MARK)

- Why solid carbon dioxide is called 'Dry ice' ?
- Define latent heat of fusion.
- Define latent heat of vaporization.
- What is condensation ? How is the condensation of a gas carried out ?
- What produces more severe burns, boiling water or steam?
- Define : (i) Melting point (ii) Boiling point (iii) Vapourisation (iv) Freezing
- When a jar of coffee is opened, people in all parts of the room soon notice the smell. Explain why this happens.
- Why do solids not diffuse ?
- The following diagram shows the three states of matter and how they can be interchanged. Name the changes A to E.

- A constant pressure tank of gas at 1.01 Atm has propane in it at 15°C when it is at 255 cubic meters. What is its volume at 48°C?
- Which diffuses faster, the bad smell from a cat-pan due to ammonia or an expensive French perfume with an average molecular weight of 170 g/mol ? How much faster does the faster one diffuse?
- What is the mass of 15 liters of chlorine gas at STP?
- How many liters of ammonia at STP are produced when 10 g of hydrogen is combined with nitrogen?
- How many milliliters of hydrogen at 0°C and 1400 mmHg are produced if 15g of magnesium reacts with sulfuric acid?
- What is the mass of 25 liters of fluorine gas at 2.85 atm, 450°C?

SHORT ANSWER TYPE QUESTIONS (3 MARKS)

- A certain volume of a gas is under a pressure of 900 mm of Hg. When the pressure is increased by 300mm, the gas occupies 2700 ml. If this change occurs at a constant temperature, calculate the initial volume of the gas.
- The volume of a given mass of gas, at 150°C is 400 ml. At what temperature, will it occupy a volume of 600ml at the same pressure?
- A gas occupies 500 ml at 40°C and 800 mm pressure. What volume will it occupy at 353°C and 600 mm pressure?

- All materials move from solid to liquid to gas as the temperature increases.
- Gas molecules are always evenly distributed in the atmosphere.
- Because electrons have been stripped away from atoms in plasma, plasmas have a negative charge.
- It is just as easy to compress a liquid, as it is to compress a gas.
- Evaporation and boiling are the same process because molecules move from a liquid to gas state.
- If we pour liquid nitrogen (N_2) into a glass, it will change its state to a solid.

LONG ANSWER TYPE QUESTIONS :(5 MARKS)

i. Explain how would you determine the meliting point of Ice and boiling point of water.
ii. What sorts of precautions you should take during the measurement of it Mp and Bp ?

Sub topic - Factors depending upon changing states and applications

I VERY SHORT QUESTIONS: (1 MARK)

- The change of a liquid into vapour is called –
  - vaporization (B) solidification (C) sublimation (D) None of these
- Which of the following describes the liquid phase –
  - It has a definite shape and a definite volume
  - It has a definite shape but not a definite volume
  - It has a definite volume but not a definite shape
  - It has neither a definite shape nor a definite volume
- When a teaspoon of solid sugar is dissolved in a glass of liquid water, what phase or phases are present after mixing–
  - liquid only (B) still solid and liquid (C) solid only (D) None of these
- Volume of a gas at a particular temperature and on atmosphere pressure is 200 ml. Keeping the temperature constant if pressure is increased 5 atmosphere, then volume of the gas will be –
  (A) 100 ml. (B) 40 ml. (C) 200 ml. (D) 205 ml.
- The value of gas constant R in SI unit in ideal gas equation is –
  - Newton meter per kelvin per mole (B) Joule per kelvin per mole
  (C) Dyne cm per degree per mole (D) Litre per mole
- Crystals which are good conductors of heat and electricity are –
  - Covalent (B) Metallic (C) Molecular (D) Ionic
- Which of the following properties of liquid increases with increase of temperature –
  - vapour pressure (B) viscosity
    (C) surface tension (D) both surface tension

LONG TYPE QUESIONS 3/5-MARKS

- If the food is being cooked in the kitchen, name the process which brings smell to us.
- A diver is able to cut through water in a swimming pool. Which property of matter does this observation show?
- Sugar and salt when kept in different jars take the shape of the jar. Are they solid ?
  Justify your answer.
- The smell of hot sizzling food reaches you several metres away. List two properties of particles of matter responsible for this observation and explain this observation.

OR

Why does the smell of hot sizzling food reach you several metres away but to get the smell from cold food you have to go close ?

- Arrange the following substances in the increasing order of force of attraction between their particles:
  Oxygen, salt, milk.
- A rubber band can change its shape on stretching. Will you classify it as solid or not ? Justify your answer.

- Name the state of matter in which :
  - layers of particles can slip and slide on each other.
  - particles just move around randomly.

- Name the property of gases that helps aquatic plants and animals to survive in water.
- Give reasons for the following :
  (a) Gases fill completely the vessel in which they are kept.
  (b) Gases exert pressure on the walls of the containing vessel.
- Give reasons for the following :
  (a) Water at room temperature is liquid.
  (b) A gas cylinder cannot be half filled.