

Write true or false

- The temperature of a substance remains unaffected during its change of state: T
- Ice melts at hundred degrees celsius: F
- Water at 100°C has more heat than steam at 100°C : F
- Evaporation of a liquid causes cooling: T
- Water evaporates only at 100°C : F
- Boiling takes place at all temperatures: F

- Evaporation takes place over the entire mass of the liquid: F
- The process of a gas converting directly into solid is called vaporization: F
- At higher altitudes water boils at 100°C : F
- The melting point of ice is 0°C : T

2° Fill in the blanks

a) Evaporation takes place at all temperatures

b) ~~freezing process is just the reverse of melting~~

c) sublimation is a process that involves direct conversion of a solid into its vapour on heating

d) The temperature at which a solid converts into a liquid is called its melting point

e) The smallest unit of matter that exists freely in nature is called molecule

23) f) Molecules of a substance are always in a state of ~~rest~~ motion and so they possess kinetic energy

g) Inter-molecular space is maximum in gases less in liquids and the ~~most~~ least in solids

h) Inter-molecular force of attraction is maximum in solids, less in liquids and the least in gases

Q3- Match the following:

Section A

Section B

- a) Molecules - (iv) matter
- b) 100°C - (1) water boils
- c) 0°C - (2) water freezes
- d) At all temperatures - (ii) evaporation
- e) camphor - (iii) changes from solid to gas

Q 4. Select the correct alternative:

(a) The inter-molecular ~~spaces~~^{force} are maximum in =

(i) solids

(b) The intermolecular space is maximum in =

(iii) gases

(c) The molecules can move freely anywhere in =

(i) gases

(d) The molecules can only move within the boundary =

(i) liquids

(e) The temperature at which a liquid ~~state~~ gets converted into its vapour state is ~~at~~ called its:

(ii) boiling point

(f) Rapid conversion of water into steam is an example of:

(iv) vapourization

(g) Evaporation takes place from the:

(i) surface of liquid.

(h) boiling takes place from:

(ii) throughout the liquid.

B. Short/long answer question:

1) Define the term matter. What is it composed of?

= Something that occupies space, has mass and can be perceived by our ~~senses~~ senses. ~~They~~
It is composed of molecules.

2) State 3 properties of molecules of matter?

= * Small in size

* Attract to each other.

* They have spaces between them.

Q3) What do you mean by intermolecular spaces?
How do they vary in different states of matter?

= ~~The~~ The space between 2 molecules. In solid they are tightly packed, In liquids they are a little loosely packed and in gas they are freely packed.

Q4) What is meant by inter-molecular forces of attraction? How do they vary in solids, liquids and gases?

= The attraction between ~~two~~ molecules is called the inter-molecular forces. In solids the force of attraction is maximum. In liquids it's less than solid and in gas it is the least.

Q5) Which of the are correct?

- Solids have definite shape and definite volume ~~and~~: true
- Liquids have definite volume but no definite shape: true
- Gases have definite volume but no definite shape: false

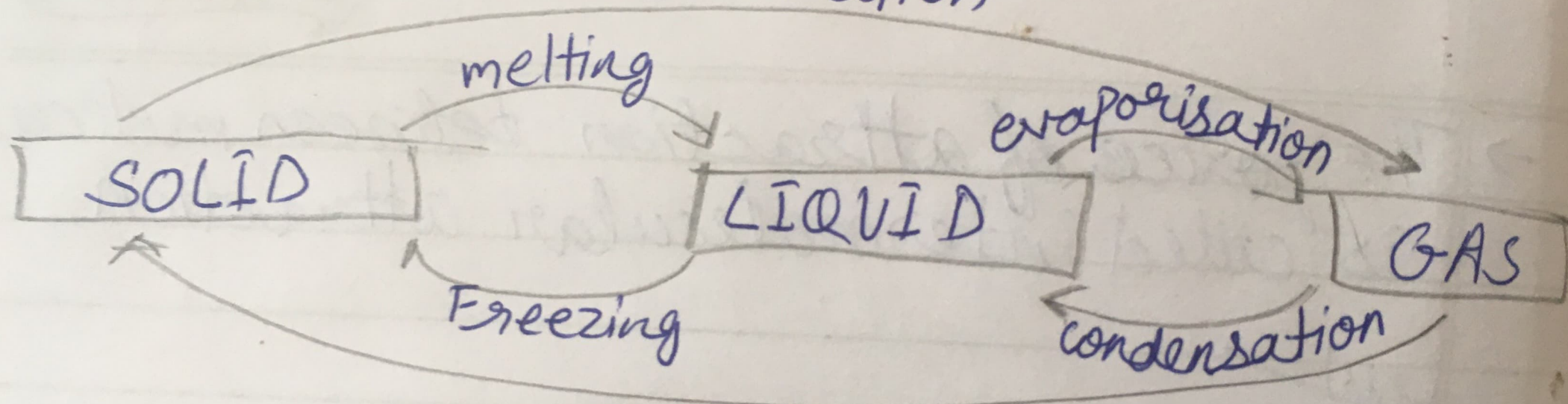
d) liquids have both definite volume ~~and~~ and definite volume ~~of~~ : false.

Q.6) Discuss the three states of matter solid, liquid and gas on the basis of ~~molecular~~ molecular model

= Solids: They are very tightly packed
Liquids: They are less tightly packed than solids
Gas: They are loosely packed

Q.7) What do you mean by the change of state? Write the flowchart ~~showing~~ showing the complete cycle of change of state.

Sublimation



Freezing

Deposition

Q7) The process of change from one form of state to another form of state either by absorption or rejection

Q 8) Differentiate between melting point and freezing point, giving atleast one example of each-

= Melting point

* The constant temperature at which a solid changes into liquid is called melting point.

Ex: Ice cubes start melting and change state from a solid to ~~gas~~ liquid at the temperature of 0°C

Boiling point

* The constant temperature at which a liquid starts changing into gas is called boiling point

Ex: Boiling point of water is ~~about~~ 100°C

Page _____

Q9) Describe the process of condensation and sublimation with examples.

= Condensation: the process of change of vapours on cooling to liquid.

Ex: When water vapours are cooled they change into water.

Sublimation: Process of change of solid into vapour on heating

Ex: Dry ice on heating converts to gas.

Q10) Explain the term melting and ~~melting~~ melting point.

= The process the change from the solid state to the liquid state on heating at a fixed temperature is called melting

Melting point is the fixed temperature at which a solid starts changing to its liquid state.

Q11) Describe an experiment to demonstrate that a substance absorbs heat during melting without change in its temperature.

= To show:- A substance absorbs heat during melting without change in its temperature.

Procedure:- Take 150g of ice in a beaker and suspend a ~~glass~~ laboratory thermometer so that the bulb is in contact with the ice. Start heating and note the temperature when the ice starts melting. Finally note the temperature when all the ice is completely melted.

Observation:- There is no change in the temperature during the change of state, from solid to ~~solid~~ liquid. As we know that for the change of state, heat is required thus substances absorb heat during melting without change in its temperature.

Q12) Explain the terms vaporization and boiling point.

= Vaporization: The process of change of liquid to vapours on heating

Boiling point: The temperature at which a liquid starts changing into vapours or gas at constant temperature.

Q13) A liquid ~~can~~ change into vapours state

(a) At a fixed temperature: Boiling

(b) At all temperatures: Evaporation

Q14) Melting point of ice: 0°C

Q15) Describe an experiment to demonstrate that water absorbs heat during boiling at a constant temperature?

= Aim: Water absorbs heat during boiling at a ~~and~~ constant temperature

Equipments required: Water, Beaker, Burner, tripod stand, Vertical stand wire gauze

Explanation: take some water in the beaker. Suspend a thermometer in a beaker in water so the bulb of the thermometer

remains in water without touching the bottom or the sides. Supply the heat by the burner and note the temperature at room temperature.

Maintain the record of temperature after every minute.

Temperature rises and as it reaches 100°C water starts boiling. Though heat is being supplied, the temperature does not rise and it remains constant 100°C and bubbles formed are seen.

~~Conclusion~~ Conclusion: boiling point of water is 100°C and at boiling point heat supplied is absorbed by water at constant temperature.

Q16) State (a) the melting point of ice
(b) the boiling point of water.

= (a) 0°C
(b) 100°C

Q17) What is evaporation?

= The change of state of a liquid to vapour at all temperatures is called evaporation.

Q18) State three factors which affect the rate of evaporation of a liquid.

= (i) Area of exposed surface
(ii) temperature of liquid
(iii) nature of the liquid.

Q19) Wet clothes dry more quickly on a warm day than on a cold humid day. Explain.

= Clothes dry more quickly on a warm day than on a cold humid day because the rate of evaporation is ~~directly~~ is higher and there is no moisture in the air.

Q20) Water in a dish evaporates faster than in a bottle. Give reason.

= As the surface area of the dish is larger.

Q21) Why are volatile liquids such as alcohol and spirit stored in tightly closed bottles?

= Volatile liquids like alcohol and spirit evaporate easily so they are stored in tightly closed bottles.

Q22) The boiling point of water = 100°C

Q23) Why is cooling produced on evaporation of a ~~type~~ liquid?

= Heat is required for evaporation of a

liquid. This heat is taken from the surroundings, thus cooling the surroundings.

Q24) Explain with an example to demonstrate that when a liquid evaporates, it takes heat from its surroundings.

= If you pour spirit on cotton and wrap it around the bulb of a thermometer, the reading of the thermometer falls. This shows that cooling is produced when a liquid evaporates taking heat from the surroundings.

Q25) Give two applications of evaporation.

- = (i) Drying of wet clothes.
- (ii) Water kept outside

Q26) Explain why on hot summer days water remains cool in earthen pots.

= The water kept in earthen pots seeps into the small pores in the pot and

Evaporates from the surface of the pot. The heat required for evaporation is taken from water inside the pot, thus cooling the water stored inside.

Q27) A patient suffering from high fever is advised to put wet cloth strips on his forehead. Why?

= Water from the wet strips evaporates taking latent heat required for evaporation from the forehead. The temperature of the forehead falls and the patient feels relieved.

Q28) What do you mean by sublimation? Explain with an example.

= Sublimation is the process by which a substance changes from solid state directly to vapour state.

Ex: dry ice, naphthalene balls.

Q29) Why does the size of naphthalene balls decrease when left open?

= Due to sublimation the naphthalene balls ~~size~~ size decreases when left open.

Q30) Describe an experiment to demonstrate the process of sublimation.

= When ammonium chloride is heated it turns directly into gas :-

* Put 5 grams of ammonium chloride in a china dish

* Put the dish on a tripod and put a bunsen burner ~~and~~

* Put a glass funnel of top of the dish and put a cotton piece in the opening of ~~the~~ the funnel.

* Light the burner ~~and~~ and we will see that gas is formed. So it proves that ammonium ~~gas~~ ~~chloride~~ chloride ~~turns~~ turns into gas on heating by sublimation.