

CH1 MATTER

A) Objective Questions

1) Write True or False

- a) The temperature of a substance remains unaffected during its change of state. True.
- b) Ice melts at 100°C . False.
- c) Water at 100°C has more heat than steam at 100°C .
False.
- d) Evaporation of a liquid causes cooling. True.
- e) Water only evaporates at 100°C . True.
- f) Boiling takes place at all temperature. False.
- g) Evaporation takes place over the entire mass of the liquid. False.
- h) The process of a gas converting directly into solid is called vaporization. False.
- i) At high altitudes, water boils above 100°C . False.
- j) The melting point of Ice is 0°C . True.

B) Fill in the Blanks.

- | | |
|------------------|----------------------------|
| a) all | f) motion, kinetic energy |
| b) freezing | g) gas, liquid, solid |
| c) sublimation | h) solids, liquids, gases. |
| d) melting point | |
| e) molecule | |

c) Match the following.

Column A	Column B
i) Molecules	a) water boils
ii) 100°C	b) evaporation
iii) 0°C	c) change from solid to gas
iv) at all temperatures	d) water
v) Camphor	e) water freezes.

D) Select the correct alternative.

- | | |
|------------------------------|---------------------------------|
| a) (i) solids | f) (v) vaporization |
| b) (iii) gases | g) (i) surface of liquid |
| c) (i) (ii) gases | h) (iii) throughout the liquid. |
| d) (i) liquids | |
| e) (ii) boiling point | |

E) Short/long Questions.

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

Matter is something which occupies space, has mass and can be felt by our senses. composed of molecules.

2) State three ~~part~~ properties of molecules of matter.

* Molecules are very small in size.

* The molecules of matter have spaces between them.

* Molecules are in constant motion.

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

Inter molecular space "The spacing between the molecules of matter is called Inter molecular space."

The inter molecular space is less in solids more in liquids and still more in gases.

4) What is meant by intermolecular forces of attraction? How do they vary in solids, liquids and gases.

Inter-molecular forces of Attraction: "The forces of attraction between the molecules of matter is called the inter molecular force of attraction".

The inter molecular force is maximum in solids, less in liquids and least in gases.

Q5) which of the following is correct?

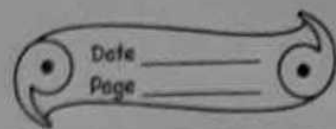
(a) True (c) False

(b) True (d) False

Q6) Solids: The molecules are very tightly packed that there is no or very less intermolecular space and there is high intermolecular force of attraction.

liquids: The molecules are ~~very~~ less tightly packed as compared to solids and also there is lesser force of

MATTER - EXERCISES [CONTINUATION]



Gases

The molecules are far apart from each other, e.g. have the greatest intermolecular distance which result into the weakest intermolecular forces of attraction.

Q7) CHANGE OF STATE : The process of change from one state to another state either by absorption or rejection of heat ~~and~~ at a constant temperature is called the change of state.

COMPLETE CYCLE OF CHANGE OF STATE : On heating a solid changes to liquid and liquid on heating changes to vapours. On cooling vapours condense to liquid, liquids on cooling freeze to solids. Some solids on heating change to vapours. On rejection of heating vapours solidify.

Q8) MELTING POINT

The constant temperature at which a solid changes into liquid. E.g. - Ice (solid) change to water (liquid)

BOILING POINT

The temperature at which a liquid start changing in vapour without further rise in temperature.

E.g. - Boiling point of water (liquid) 100°C

Q9) CONDENSATION

The change of vapours on cooling at fixed temperature to liquid is called condensation. e.g. - ~~water~~ → ~~at 100~~

SUBLIMATION

The process of change of solid directly into vapours on heating is called sublimation. "I.I."

Q10) Melting - The change from the solid state to the liquid state on heating at a fixed temperature is called melting.

Melting Point - It can be defined as the fixed temperature at which a solid starts changing to its liquid state.

Q12) VAPORIZATION: 'change of liquid to vapours (gas) on heating at constant temperature is called vaporization

BOILING POINT: The temperature at which a liquid starts changing into vapours or gas at constant temperature is called Boiling Point.

Q13) (a) Boiling Point

(b) Evaporation

The process involved in two cases is vaporization boiling.

Q14) From the above observations we conclude that ice melts at 0°C during which heat is supplied but temperature does not rise shows that heat supplied is used to change every molecule of ice into water and when whole of ice is melted, temperature ~~to~~ starts rising.

Q15) (a) Is the constant temperature at which it starts (melting) changing from ice to water. It is 0°C for ice.
(b) Is that constant temperature at which water starts (Boiling) changing from water to steam (vapours). It is 100°C for water.

Q17) **EVAPORATION** - the change of state of a liquid to vapour at all temperatures from the surface of liquid is called evaporation.

Q18) They are -

- * Area of Exposed Surface.
- * Temperature of liquid.
- * Nature of the liquid.
- * Presence of Humidity.

Q19) Rate of evaporation is directly proportional to temperature. Thus, rate of evaporation is higher on warm

day i.e. hot day than cold day having low temperature and clothes dry soon on warm day.

Q20) Rate of evaporation is more when the area of exposed surface is more. As area exposed in a dish is more, evaporation is also more.

Q21) Rate of evaporation depends on nature of liquid. - more volatile liquids like Alcohol and Spirit evaporate easily, hence these are stored in tightly closed bottles to avoid their evaporation.

Q22) From the table given above we note that as thermometer shows 100°C , it becomes constant and though heat is being supplied. This means boiling point of water is 100°C and heat supplied is being used to convert every molecule of water into vapours (steam) till whole of the water gets Boiled off.

Q23) The evaporation of a liquid it requires HEAT. This heat is taken from the surroundings like body or palm or forehead or finger and its temperature falls and we feel cool.

Q24) If some spirit is poured on cotton wrapped around the bulb of a thermometer falls. This shows that cooling is produced when a liquid evaporates taking heat from surroundings.

Q25) 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.

Q27) water in wet strips evaporates taking latent heat required for evaporation from the forehead. The temperature of forehead (Body of the patient) falls and he feels relieved.

Q28) Sublimation : Change of solid state of matter directly on heating to vapour state and on cooling vapour to solid is called sublimation.