II. Short Answer Type Questions
Question 1. Why do we see water droplets collected on the outer surface of a glass container, containing ice?
Answer: The water vapour present in air, comes in contact with the cold outer surface of the container thereby condensing it to form water droplets.

Question 2. Explain why solids have fixed shape but liquids and gases do not have fixed shape.
Answer: Solids have fixed shape due to strong intermolecular force of attraction between them. The liquids and gases have molecules with less intermolecular force of attraction and hence they can flow and take shape of the container.

Question 3. Liquids and gases can be compressed but it is difficult to compress solids. Why?
Answer: Liquids and gases have intermolecular space, on applying pressure externally on them the molecules can come closer thereby minimizing the space between them. But in case of solids there is no intermolecular space to do so.

Question 4. A balloon when kept in sun, bursts after some time. Why?
Answer: The balloon has air filled in it. The balloon when kept in sun gets heated and the air inside it also gets heated. The molecules of air get energy, and vibrate faster thereby exerting large force on the walls of the balloon. Due to this expansion of gases the balloon bursts.

Question 5. Why do people perspire a lot on a hot humid day?
Answer: On a hot, humid day, due to the heat our body starts sweating for the cooling mechanism i.e., by evaporation and gets cooling effect. But the air cannot hold any more water on a humid day and therefore the sweat or perspiration is seen.

Question 6. Distinguish between evaporation and boiling.
Answer:

Evaporation	***Boiling***
1. Evaporation is a surface phenomenon.	Boiling is a bulk phenomenon.
2. It is a slow process.	It is a fast process.
3. It takes place at all temperatures.	It takes place at a definite temperature.

Question 7. Why is it advisable to use pressure cooker at higher altitudes?
Answer: At higher altitudes, the atmospheric pressure is low and the water boils very fast and evaporates at faster rate therefore the pressure is required to increase the cooking process and this is done by using pressure cooker which increases the pressure inside the container and cooks food faster.

Question 8. What are fluids?
Answer: The states of matter that can flow due to less intermolecular force of attraction, are liquids and gases and are called as fluids.

Question 9. One kg cotton and one kg sand, which is more denser?

Why?
Answer: One kg sand is more denser than 1 kg cotton because density = mass/volume .
The volume required by cotton is more than the sand and density and volume are inversely proportional.

Question 10. Why is water liquid at room temperature?
Answer: At room temperature, the molecules of water have some intermolecular force of attraction and the room temperature cannot provide sufficient heat for these molecules to overcome their force of attraction and therefore remain in liquid phase.

Question 11. State the differences between solid, liquid and gas.
Answer:

Solid	Liquid	Gas
1. Have strong intermolecular force.	Weak intermolecular force.	Very weak intermolecular force.
2. Very less intermolecular space.	Large intermolecular space.	Very large intermolecular space.
3. Have definite shape and volume.	Do not have definite shape but have definite volume.	No definite shape and volume.
4. Have high density.	Density is low.	Very low density.
5. Solids cannot be compressed.	Liquids can be compressed.	Gases can be highly compressed.

Question 12. Cotton in solid but it floats on water. Why?
Answer: Cotton has large number of pores, in which air is trapped. Hence reducing its density and increasing the volume. Therefore cotton floats on water. But when these pores get filled with water it starts sinking.

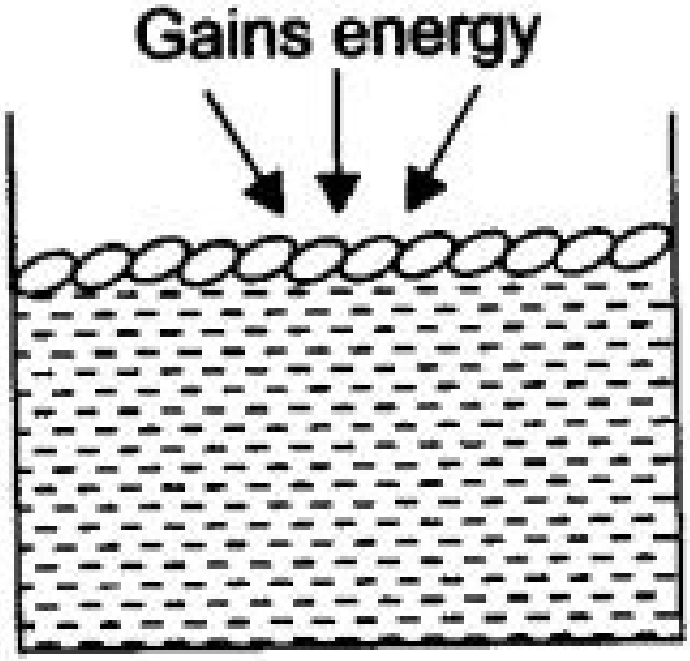
Question 13. Why arc solids generally denser than liquids and gases?
Answer: Density of a substance is given by a formula= Mass/Volume
In case of solids the molecules are tightly packed and hence large mass is concentrated in very small volume. Hence their density is more. But in case of liquids and gases, their molecules have intermolecular space and hence they don't have large mass concentrated in small volume. So the density of solids is generally more than that of the liquids and gases.

Question 14. On a hot sunny day, why do people sprinkle water on the roof or open ground?
Answer: During hot sunny day, the surface of roof or ground absorbs large amount of heat and remains hot, on sprinkling water on these surfaces, the water absorbs large amount of heat from the surface due to its large latent heat of vaporisation thereby allowing the hot surface to cool.

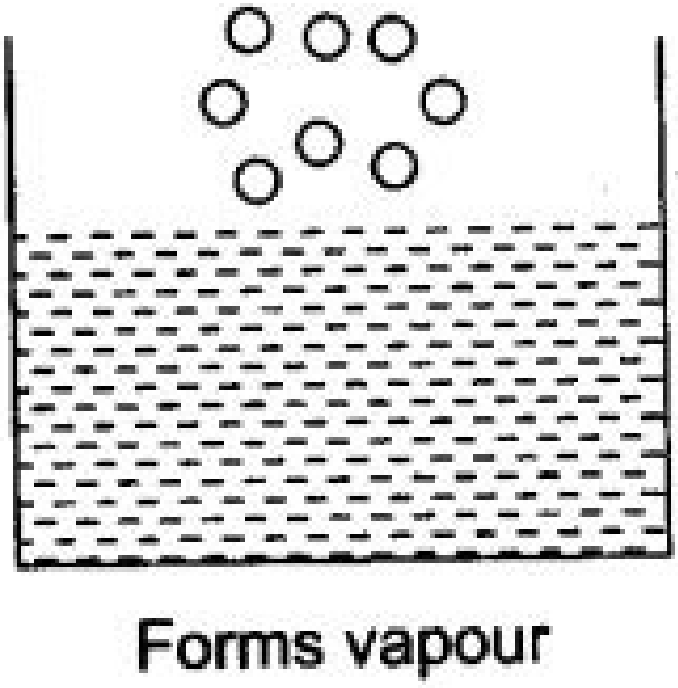
Question 15. On a hot sunny dug why do we feel pleasant sitting under a tree?
Answer: Tree has lot of leaves which constantly show transpiration. Transpiration is loss of water through small tiny pores of leaves called stomata. When this water comes on the surface of leaf the water evaporates thereby causing cooling effect. Therefore we feel pleasant sitting under the tree on a hot sunny day.

Question 16. The U'mpeuiUnc at which liquids change into vapours is very high, for example, water vaporises at 100°C then how is n possible for water to evaporate at room temperature or at are other temperature?
Answer: The molecules of water present on the surface of the exposed area which are in very small fraction, gains the energy from the surrounding. With this higher kinetic energy they are able to break the force of attraction between them and hence get converted into vapour state.
This phenomenon of change of a liquid into vapours that takes

place at any temperature below its boiling point is called evaporation.



Question 17. Name the factors that affix l evaporation.
Answer: The rate of evaporation will increase with
(1) an increase of surface area,
(2) an increase of temperature,
(3) a decrease in humidity,
(4) an increase in wind speed.



Question 18. The melting point of ice is 273.16 K. What does this mean? Explain in detail.
Answer: Ice is solid at 0°C i.e., 273° K. The molecules of ice are tightly packed. These molecules have to overcome the force of attraction with which they are held
and hence they gain this heat from the surrounding but the temperature remains the same as their energy is used to overcome the force of attraction between the particles. The particles have their state and starts vibrating freely and a stage reaches when the solid ice melts and is converted to liquid state at the same

temperature i.e., 273 K.

Question 19. How is the high compressibility property of gas useful to us?
Answer: The gases have high compressibility. This property is used in the following situation:
(1) LPG (liquefied petroleum gas) is a fuel which is made up of petroleum gas. On compressing this petroleum gas it forms liquid.
(2) Oxygen cylinders in the hospitals have compressed gas filled in it.
(3) CNG (compressed natural gas) is a natural gas, methane, which is compressed and used as a fuel in vehicles and at home.

Question 20. With the help of an example, explain how diffusion of gases in water is essential?
Answer: The gases from the atmosphere diffuse and dissolve in water. Gases like oxygen and carbon dioxide diffuse in water, are essential for the survival of aquatic animals and plants.
Animals breathe in this oxygen dissolved in water for their survival and plants can use carbon dioxide dissolved in water for photosynthesis.

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