



UNIQUE STUDY POINT
EXTRA QUESTIONS : CLASS IX
MATTER IN OUR SURROUNDING

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.

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.

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.

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.

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.

6. Distinguish between evaporation and boiling.

Answer:

Evaporation	Boiling
Evaporation is a normal process that occurs when the liquid	Boiling is an unnatural process where the

form changes into the gaseous form; while causing an increase in the pressure or temperature.	liquid gets heated up and vaporized due to continuous heating of the liquid.
Evaporation usually occurs on the surface of the liquid being heated up.	Boiling usually occurs on the entire mass of the liquid that gets heated up.
Bubbling effect is not visible in evaporation.	Bubbling effect is visible during the process of boiling.
The process of evaporation is usually slower and more carried out when compared to boiling.	The process of boiling is usually much quicker and the process happens quite rapidly as well.

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.

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.

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.

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.

11. State the differences between solid, liquid and gas.

Answer:

Solids	Liquids	Gases
Highly Strong intermolecular forces between the molecules, leads to a definite volume in Solids.	The intermolecular forces are stronger than gases but weaker than solids.	The intermolecular forces are practically non-existent. Thus, there is no definite volume.
Solids have a definite shape to them.	Liquids do not have a definite shape.	Gases do not have a definite shape.
The intermolecular space between solids is absent.	The intermolecular space is moderate but present.	The intermolecular space is free-flowing and plenty.
The force of attraction between the molecules is incredibly high.	The force of attraction between molecules is pretty moderate.	There is no intermolecular force of attraction between the molecules.
They are incompressible.	Liquids cannot be compressed.	Gases can be compressed quite easily.
Solids have a definite shape and volume.	Liquids have a definite volume.	Gases have no definite volume.

12. Cotton in solid but it floats on water. Why?

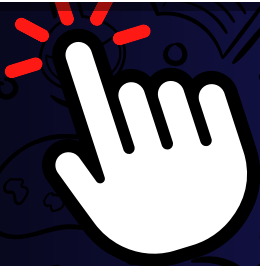
Answer: Cotton has large number of pores, in which air is trapped. Hence reducing its density and increasing the volume. Therefore cotton floats on water. But when these pores get filled with water it starts sinking.

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