

परमाणु ऊर्जा शिक्षण संस्था, मुंबई  
**Atomic Energy Education Society**  
**Session-2023-24**

**Class: IX**

**Subject: Science(Chemistry)**

**WORKSHEET NO-2**

**Name of the Chapter: Matter in our surroundings**

**Name of the Topic : Matter in our surroundings**

**I.Choose the correct option from the following .**

**1x10=10**

- Which of the following states of matter has the highest kinetic energy of particles?  
A) Solid      B) Liquid      C) Gas      D) Plasma
- The process of changing a substance from a solid directly to a gas is called:  
A) Melting      B) Freezing      C) Sublimation      D) Condensation
- Which of the following has the highest intermolecular forces?  
A) Gas      B) Liquid      C) Solid      D) Plasma
- The movement of particles is highest in which state of matter?  
A) Solid      B) Liquid      C) Gas      D) Plasma
- The phenomenon in which a solid directly changes into a gas without passing through the liquid state is called:  
A) Evaporation      B) Boiling      C) Sublimation      D) Condensation
- The process of conversion of a liquid into a solid is known as:  
A) Condensation      B) Sublimation      C) Freezing      D) Melting
- The temperature at which a substance changes from a liquid to a gas at its boiling point is called:  
A) Freezing point      B) Condensation point      C) Evaporation point      D) Vaporization point
- Which of the following substances is an example of a sublimable substance?  
A) Sugar      B) Salt      C) Sand      d) Camphor

9. The process of a gas changing directly into a solid is known as:  
A) Freezing    B) Condensation    C) Sublimation    D) Deposition
10. Which of the following statements is true about the particles in a solid?  
A) They have fixed positions and vibrate around them.  
B) They have a lot of space between them.  
C) They move freely in all directions.  
D) They are far apart and move at high speeds.

**II. Fill in the blanks with suitable word/s.**

**1x10=10**

1. The process by which a liquid changes into a gas at any temperature below its boiling point is called \_\_\_\_\_.
2. The temperature at which a substance changes from a solid to a liquid is its \_\_\_\_\_ point.
3. The change of state from a liquid to a solid is called \_\_\_\_\_.
4. The state of matter with a definite shape and volume is \_\_\_\_\_.
5. The process of changing a solid directly into a gas without becoming a liquid is called \_\_\_\_\_.
6. The pressure exerted by a gas is due to the collision of its particles with the walls of the container, and it is known as \_\_\_\_\_ pressure.
7. The process of changing a gas into a liquid is known as \_\_\_\_\_.
8. The temperature at which a liquid changes into a gas at a fixed pressure is its \_\_\_\_\_ point.
9. The property of a substance to mix completely with another substance is called \_\_\_\_\_.
10. A mixture of two or more substances in any proportion is called a \_\_\_\_\_.

**III. Answer the following questions.**

**2x10=20**

1. Explain the term "kinetic energy of particles" in relation to the states of matter.
2. How does the arrangement of particles differ in solids, liquids, and gases?
3. Define evaporation. How is it different from boiling?
4. Why do substances expand when heated and contract when cooled?
5. State the differences between the physical properties of solids and liquids.

6. What is sublimation? Provide an example of a substance that undergoes sublimation.
7. How does the intermolecular space and forces differ in solids and gases?
8. Describe the process of deposition and provide an example.
9. Why does a gas exert pressure on the walls of its container?
10. Why does the temperature of a substance remain constant during its phase change?

**IV. Answer the following questions.**

**3x5=15**

1. Differentiate between boiling and evaporation.
2. Compare the characteristics of solids, liquids, and gases based on shape, volume, and compressibility.
3. Discuss the factors that affect the rate of evaporation of a liquid.
4. Explain why the surface of a liquid in an open container gradually decreases over time.
5. Define latent heat of fusion and latent heat of vaporization. How are they different?

**IV. Answer the following questions.**

**5x5=25**

1. Describe the process of sublimation with examples of substances that undergo sublimation. How can sublimation be useful in daily life?
2. Explain the term "latent heat of fusion." How does it differ from the "latent heat of vaporization"?
3. Compare the behavior of solids, liquids, and gases in terms of their molecular arrangement, intermolecular forces, kinetic energy, and compressibility.
4. Explain why ice has a lower density compared to water. How does this property of ice affect aquatic life during winters?
5. What is the role of diffusion in our daily life? Give examples to illustrate its importance.

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