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Jars Education

Shop no. 2,3,4 hendre pada Badlapur west thane

Time : 1 hour 30 Minute

STD 9 Science
Chapter Based Test

Total Marks : 50

section A

*** Choose the correct option from the given options** [7]

1. When heat is constantly supplied by a burner to boiling water, then the temperature of water during vaporisation:

   (A) Rises very slowly. (B) Rises rapidly until steam is produced. (C) First rises and then becomes constant. (D) Does not rise at all.

2. Evaporation of a liquid _____?

   (A) Is dependent on its mass (B) Increases with increasing pressure (C) Is not affected by pressure (D) Decreases with increasing pressure

3. Rinku and Pinku had half day schools during summer. They used to go to school by autorickshaw. They observed that the auto driver covered the top of the vehicle by some mats and sprinkled water on them regularly, which keeps it cool. Which of the following phenomena is involved here:

   (A) Condensation (B) Evaporation (C) Sublimation (D) Diffusion

4. In liquids, there is _____ and _____ between particles:

   (A) Strong force of attraction, more spacing (B) Weaker force of attraction, more spacing (C) Weaker force of attraction, less spacing (D) Strong force of attraction, less spacingWeaker force of attraction, more spacing

5. If the temperature of an object is 268K, it will be equivalent to:

   (A) -5°C (B) +5°C (C) 368°C (D) -25°C

6. The latent heat of fusion of ice is:

   (A) 3.34×10^5J/ kg (B) 22.5×10^5J/ kg (C) 3.34×10^4J/ kg (D) 22.5×10^4J/ kg

7. A few substances are arranged in the increasing order of 'forces of attraction' between their particles. Which one of the following represents the correct arrangement?

   a. Water, air, wind.
   b. Air, sugar, oil.
   c. Oxygen, water, sugar.
   d. Salt, juice, air.

*** Fill in the blank with correct answer** [5]

8. Fill in the blank.
   Evaporation of a liquid at room temperature leads to a _____ effect.

9. Fill in the blank.

At room temperature the forces of attraction between the particles of solid substances are _____ than those which exist in the gaseous state.

10. Fill in the following blanks with suitable words:
Solid, liquid and gas are the three _____ of matter.

11. Fill in the following blanks with suitable words:
The best evidence that the particles of matter are constantly moving comes from the studies of _____ and _____.

12. Fill in the following blanks with suitable words:
Gases can be liquefied by applying _____ and lowering _____.

* Do as directed [2]

13. Explain why:
Air is used to inflate tyres.

14. Which of the two diffuses faster: a liquid or a gas?

section B

* Answer the Questions in brief [10]

1. Explain the following:
When an incense stick is lighted in the corner of room, its fragrance spreads quickly in the entire room.

2. What are the characteristics of the particles of matter?

3. Give reasons for the following observation:
The smell of hot sizzling food reaches you several metres away, but to get the smell from cold food you have to go close.

4. Define the term 'latent heat of fusion' of a solid. How much is the latent heat of fusion of ice?

5. Why gases are compressible but not liquids?

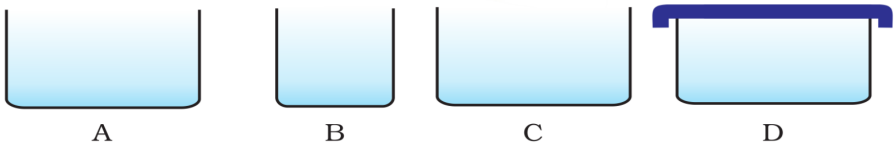
section C

* Answer the Questions in detail [12]

1. How will you demonstrate that water vapour is present in air?

2. How does the water kept in an earthen pot (matka) become cold during summer?

3. Look at the figure and suggest in which of the vessels A, B, C or D, the rate of evaporation will be the highest? Explain.



4. The scientists now say that there are actually five states of matter A, B, C, D and E. The state A has a fixed volume but no fixed shape. The state B can be compressed very

easily by applying pressure and state C has a fixed shape as well as a fixed volume. The state D is mixture of free electrons and ions whereas state E is named after an Indian scientist and a famous physicist.

a. Name the physical states (i) A (ii) B (iii) C (iv) D, and (v) E.
b. Name one substance belonging to state C which can directly change into vapours on heating. What is this process known as?
c. Name one substance which normally belongs to state B but whose solid form changes directly into gaseous state.
d. Name the most common substance belonging to state A.
e. Which state of matter makes the sum and other stars to glow.

section D

*** Answer the Questions in detail [5 marks each]** **[10]**

1. There are four substances W, X, Y and Z. The substance W is a dark violet solid having diatomic molecules. A solution of W in alcohol is used as a common antiseptic C. The substance X is a white solid which is usually recovered from sea water on a large scale. The substance Y is a white solid which is insoluble in water and used in the form of small balls for the safe storage of woollen clothes. The substance Z is a yet another white solid which is used in making commonly used dry cells.
   a. Name (i) W (ii) X (iii) Y and (iv) Z.
   b. Out of W, X, Y and Z, which substance/ substances can undergo sublimation?
   c. Which substances organic in nature?
   d. What is the name of substance C?
   e. Which substance belongs to the halogen family?
2. You are provided with a mixture of naphthalene and ammonium chloride by your teacher. Suggest an activity to separate them with well labelled diagram.

Section E

*** case study based quetion.** **[4]**

1. What happens inside the matter during change of state? On increasing the temperature of solids, the kinetic energy of the particles increases. Due to the increase in kinetic energy, the

   Particles start vibrating with greater speed. The energy supplied by heat overcomes the forces of attraction between the particles. The particles leave their fixed positions and start moving more freely. A stage is reached when the solid melts and is converted to a liquid. The minimum temperature at which a solid melts to become a liquid at the atmospheric pressure is called its melting point.

   The temperature of the system does not change after the melting point is reached, till all the ice melts. This happens even though we continue to heat the beaker, that is, we continue to supply heat. This heat gets used up in changing the state by overcoming the forces of attraction between the particles. The amount of heat energy that is required to change 1 kg of a solid into liquid at atmospheric pressure at its melting point is known as the latent heat of fusion. So, particles in water at 0^0 C (273 K) have more energy as compared to particles in ice at the same temperature.

   The temperature at which a liquid starts boiling at the atmospheric pressure is known as its boiling point. Boiling is a bulk phenomenon. Particles from the bulk of the liquid gain

enough energy to change into the vapour state. A change of state directly from solid to gas without changing into liquid state is called sublimation and the direct change of gas to solid without changing into liquid is called deposition.

i.) A change of state directly from solid to gas without changing into liquid state is called

a.) Sublimation

b.) Deposition

c.) Boiling point

d.) None of these

ii.) The direct change of gas to solid without changing into liquid is called

a.) Sublimation

b.) Deposition

c.) Boiling point

d.) None of these

iii.) The energy supplied by heat to solid is used to overcome the forces of attraction between the particles. True or false

a.) True

b.) False

c.) None of these

iv.) Define melting point and boiling point

v.) Define latent heat of fusion

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