CAREER+ ACADEMY

SARABJEET KAUR
BSC. MATH (HONS.), MCA

GRADE 9TH SCIENCE

CHAPTER 1

Matter In Our Surroundings

www.careerplusacademy.com careerplusacademy@gmail.com

/careerplusacademy /in/sarabkaur /careerplusacademy +91-987-111-5373

Chapter 1 Matter In Our Surroundings

1. A sample of water under study was found to boil at 102°C at normal temperature and pressure. Is the water pure? Will this water freeze at 0°C? Comment.
2. A student heats a beaker containing ice and water. He measures the temperature of the content of the beaker as a function of time. Which of the following (Fig. 1.1) would correctly represent the result? Justify your choice.

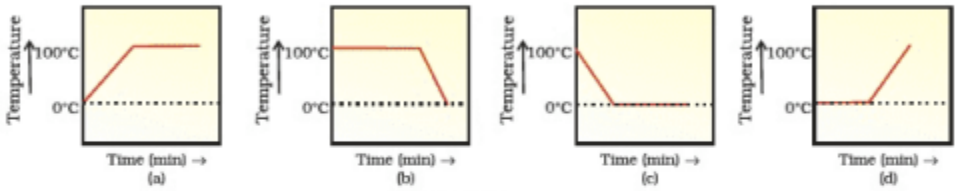

Fig. 1.1

3. Fill in the blanks:
   - (a) Evaporation of a liquid at room temperature leads to a _____ effect.
   - (b) At room temperature the forces of attraction between the particles of solid substances are _____ than those which exist in the gaseous state.
   - (c) The arrangement of particles is less ordered in the _____ state. However, there is no order in the _____ state.
   - (d) _____ is the change of gaseous state directly to solid state without going through the _____ state.
   - (e) The phenomenon of change of a liquid into the gaseous state at any temperature below its boiling point is called _____ .

4. Match the physical quantities given in column A to their S I units given in column B :

(A)	(B)
(a) Pressure	(i) cubic metre
(b) Temperature	(ii) kilogram
(c) Density	(iii) pascal
(d) Mass	(iv) kelvin
(e) Volume	(v) kilogram per cubic metre

6. 'Osmosis is a special kind of diffusion'. Comment.
7. Classify the following into osmosis/diffusion
   - (a) Swelling up of a raisin on keeping in water.
   - (b) Spreading of virus on sneezing.
   - (c) Earthworm dying on coming in contact with common salt.
   - (d) Shrinking of grapes kept in thick sugar syrup.
   - (e) Preserving pickles in salt.
   - (f) Spreading of smell of cake being baked through out the house.
   - (g) Aquatic animals using oxygen dissolved in water during respiration.

8. Water as ice has a cooling effect, whereas water as steam may cause severe burns. Explain these observations.
9. Alka was making tea in a kettle. Suddenly she felt intense heat from the puff of steam gushing out of the spout of the kettle. She wondered whether the temperature of the steam was higher than that of the water boiling in the kettle. Comment.
10. A glass tumbler containing hot water is kept in the freezer compartment of a refrigerator (temperature < 0°C). If you could measure the temperature of the content of the tumbler, which of the following graphs (Fig.1.2) would correctly represent the change in its temperature as a function of time.

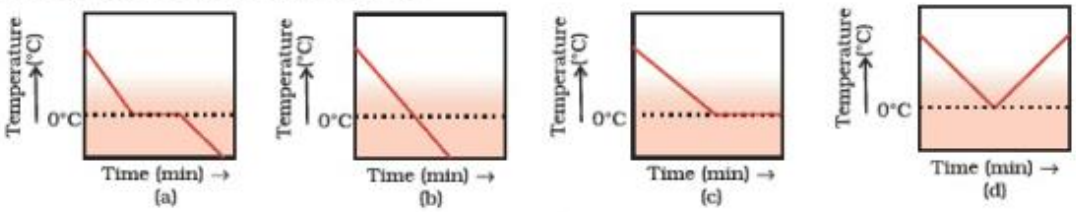

Fig. 1.2

11. Look at Fig. 1.3 and suggest in which of the vessels A,B, C or D the rate of evaporation will be the highest? Explain.

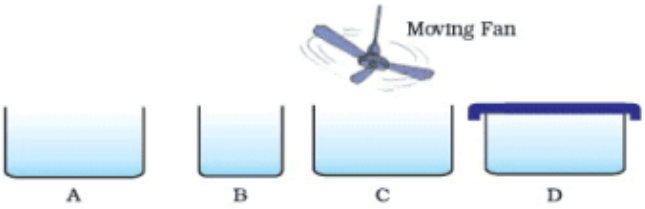

Fig. 1.3

12. (a) Conversion of solid to vapour is called sublimation. Name the term used to denote the conversion of vapour to solid.
    (b) Conversion of solid state to liquid state is called fusion; what is meant by latent heat of fusion?

Long Answer Type Questions

1. You are provided with a mixture of naphthalene and ammonium chloride by your teacher. Suggest an activity to separate them with well labelled diagram.
2. It is a hot summer day, Priyanshi and Ali are wearing cotton and nylon clothes respectively. Who do you think would be more comfortable and why?
3. You want to wear your favourite shirt to a party, but the problem is that it is still wet after a wash. What steps would you take to dry it faster?
4. Comment on the following statements:
5. (a) Evaporation produces cooling.
   (b) Rate of evaporation of an aqueous solution decreases with increase in humidity.
   (c) Sponge though compressible is a solid.
6. Why does the temperature of a substance remain constant during its melting point or boiling point?