Class 9 Science - Chapter 1: Matter in Our Surroundings

NCERT Solutions - Questions & Answers

Q1: Convert the following temperatures to Celsius scale:

(a) 293 K

(b) 470 K

A1:

(a) 293 K - 273 = 20°C

(b) 470 K - 273 = 197°C

Q2: Convert the following temperatures to Kelvin scale:

(a) 25°C

(b) 373°C

A2:

(a) 25 + 273 = 298 K

(b) 373 + 273 = 646 K

Q3: Give reason for the following observations:

(a) Naphthalene balls disappear with time without leaving any solid.

(b) We can get the smell of perfume sitting several metres away.

A3:

(a) Naphthalene undergoes sublimation, turning directly into vapour.

(b) Perfume particles diffuse through air to reach our nose.

Q4: Arrange the following substances in increasing order of forces of attraction:

Water, sugar, oxygen

A4: Oxygen < Water < Sugar

Q5: What is the physical state of water at:

(a) 250°C

(b) 100°C?

A5:

(a) At 250°C - water is in gaseous state (steam)

(b) At 100°C - both liquid and gaseous state exist (boiling point)

Q6: Give two reasons to justify:

(a) Water at room temperature is a liquid.

(b) An iron almirah is a solid at room temperature.

A6:

(a) Water has no fixed shape but definite volume and flows easily.

(b) Iron almirah has a fixed shape and is rigid.

Q7: Why is ice at 273 K more effective in cooling than water at the same temperature?

A7: Ice absorbs latent heat during melting, thus drawing more heat from surroundings and cooling more effectively.

Q8: What produces more severe burns, boiling water or steam?

A8: Steam causes more severe burns as it carries latent heat of vaporization, releasing more energy on contact.