परमाणु ऊर्जा शिक्षण संस्था
Atomic Energy Education Society
उत्तर कुंजी / Answer Key (2025-26)

कक्षा /Class: VII **विषय /Subject: Science** **अंक/Marks: 40**

दिया गया पाठ्यक्रम/Portion covered: Chapter:7 Particulate Nature of Matter Answer Key

---

Section A: Multiple Choice Questions (10 × 1 = 10 marks)

1. C) Dissolving sugar in water
2. B) Space between particles of matter
3. C) Gas
4. D) It disappears and spreads uniformly
5. C) They have large interparticle spaces
6. C) Particles move randomly
7. C) Fragrance of perfume spreading in room
8. D) Minimum interparticle space
9. B) It has loosely packed particles
10. C) Sublimation

Section B: Assertion and Reason (4 × 1 = 4 marks)

11. (a) Both A and R are true, and R is the correct explanation of A
12. (c) A is true, but R is false
13. (a) Both A and R are true, and R is the correct explanation of A
14. (a) Both A and R are true, and R is the correct explanation of A

Section C: Case-Based Questions (4 × 1 = 4 marks)

15. C) Particles move faster with heat
16. C) Faster motion of water particles
17. C) Particles are always moving
18. C) Diffusion in liquids

Section D: Short Answer Type Questions (5 × 2 = 10 marks)

19.Interparticle force is the force of attraction between the particles of matter.

Example: Solids have strong interparticle forces which keep the particles tightly packed, giving solids a fixed shape.

20.Gases are compressible because they have large spaces between particles that can be pushed closer.

Solids are not compressible because their particles are tightly packed with no significant space between them.

21.Solid:

Has a fixed shape and volume

Particles are tightly packed

Liquid:Takes the shape of the container

Particles are less tightly packed and can flow

22.Diffusion is the movement of particles from a region of higher concentration to lower concentration.

Activity: Adding a few drops of ink to a glass of water shows diffusion as the ink spreads uniformly throughout the water over time.

23.When potassium permanganate is added to water, it spreads uniformly.

When sugar dissolves in water, it seems to disappear, showing the presence of small particles.

Section E: Short Answer Type Questions (4 × 3 = 12 marks)

24.The strength of interparticle forces determines the physical state of matter:

Solids have strong forces → fixed shape and volume

Liquids have moderate forces → fixed volume but no fixed shape

Gases have weak forces → no fixed shape or volume and are highly compressible

25.When incense sticks are lit, the fragrance spreads across the room, which shows that gas particles are in constant motion and spread by diffusion.

26.Property Solids Liquids Gases

Shape Fixed Takes container’s shape No fixed shape

Volume Fixed Fixed Not fixed

Compressibility Not compressible Slightly compressible Highly compressible

27.Diagram (descriptive):

In solid (ice), particles are closely packed in a fixed arrangement.

As ice melts, the particles gain energy and move slightly apart, becoming a liquid.

On boiling, the liquid particles gain more energy and become gas, spreading far apart.

(This can be shown with 3 diagrams side by side indicating particles in solid, liquid, and gas form)