

1. Which feature of solids explains why they have a definite shape?

- A. Particles are loosely packed
B. Particles are tightly packed and held by strong forces
C. Particles have high energy
D. Particles move freely (B)

Explanation : In solids, the particles are tightly packed and have strong interparticle forces, giving them a fixed shape and volume.

2. What is the term for the space between the particles of matter?

- A. Particle zone B. Empty void
C. Interparticle space
D. Molecular gap (C)

Explanation : The small gaps between the particles of matter are called interparticle spaces.

3. Which of the following substances has the highest melting point?

- A. Ice B. Urea
C. Iron D. Chalk (C)

Explanation : Iron has a melting point of 1538°C , which is higher than that of ice and urea.

4. Which of these states of matter has negligible interparticle attraction?

- A. Solid B. Liquid
C. Gas D. Plasma (C)

Explanation : In gases, particles have very weak interparticle attraction, allowing them to move freely.

5. Which property is common to both liquids and gases?

- A. Fixed shape B. Definite volume
C. Ability to flow
D. Strong particle packing (C)

Explanation : Both liquids and gases can flow, which is why they are categorized as fluids.

6. What happens to the interparticle attraction when a solid melts?

- A. It increases B. It becomes zero
C. It remains unchanged D. It decreases (D)

Explanation : During melting, interparticle attraction weakens as particles gain energy and move apart.

7. Which activity demonstrates that particles are in constant motion?

- A. Grinding chalk into powder
B. Mixing sand in water
C. Dissolving potassium permanganate in water
D. Boiling water (C)

Explanation : Potassium permanganate spreads due to the constant movement of water particles.

8. What is meant by 'Parmanu' as per Acharya Kanad?

- A. Particle visible to the eye
B. Large molecules
C. Indivisible eternal particles of matter
D. Dust particles (C)

Explanation : Acharya Kanad described Parmanu as tiny, indivisible, and eternal particles that make up matter.

9. Why is sand not soluble in water?

- A. It reacts with water
B. Its particles do not break into smaller particles
C. It evaporates in water
D. It dissolves too slowly (B)

Explanation : Sand particles do not break into smaller particles that can occupy interparticle spaces in water, so they do not dissolve.

10. What determines the physical state of matter?

- A. Mass of particles
B. Color of substance
C. Thermal energy and interparticle attraction
D. Smell of substance (C)

Explanation : The thermal energy of particles and the strength of interparticle attraction together determine whether a substance is solid, liquid, or gas.