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Chapter 1 Matter in Our Surroundings

Q.1. In which of the following physical states, the space between the particles is the highest-

(a) Solid (b) Liquid
(c) Gas (d) Unpredictable

Ans-(c) Gas

Explanation- In gaseous state the space between the particles is the highest.

Q.2. Anything having mass and occupying space is called-

(a) Compound (b) Element
(c) Matter (d) Solution

Ans-(c) Matter

Explanation- Anything having mass and occupying space is called matter.

Q.3. The quantity of matter present in an object is called its-

(a) Weight (b) Volume
(c) Mass (d) Density

Ans-(c) Mass

Explanation- The quantity of matter present in an object is called its mass.

Q.4. The change of water into water vapour at its boiling point is called-

(a) Evaporation (b) Condensation
(c) Boiling (d) None of the above

Ans-(c) Boiling

Explanation-The change of water into water vapour at its boiling point is called the boiling of water.

Q.5. In which of the following forms of matter, the substance has neither fixed shape nor fixed volume-

(a) Solid (b) Liquid
(c) Gas (d) All the above

Ans.-(c) Gas

Explanation- Gases have neither fixed shape nor fixed volume. They take the shape, size and volume of container in which they are filled.

Q.6. Which of the following forms of matter has no fixed shape, but it has a fixed volume-

(a) Solid (b) Liquid
(c) Gas (d) All the above

Ans.-(b) Liquid

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Explanation- Liquids have no fixed shape, but they have a fixed volume. Liquids take the shape of container in which they are filled.

Q.7. Which one of the following statements is not true ?

(a) The molecules of a solid vibrate about a fixed position.
(b) The molecules in a liquid are arranged in a regular pattern.
(c) Inter-molecular force in gases is negligible.
(d) The molecules of a gas occupy all the space available.

Ans.-(b) The molecules in a liquid are arranged in a regular pattern

Explanation- The molecules in a liquid are not arranged in a regular pattern.

Q.8. If heat is constantly supplied to the boiling water, then the temperature of water during boiling-

(a) Rises very slowly
(b) Rises rapidly until steam is produced
(c) First rises and then becomes constant
(d) Does not rise at all

Ans.-(d) Does not rise at all

Explanation-Heat supplied to a liquid during boiling is used up as the latent heat of vaporization. Hence, temperature of liquid does not rise at all during boiling.

Q.9. Which of the following always results in the cooling effect ?

(a) Condensation (b) Evaporation
(c) Sublimation (d) All the above

Ans.-(b) Evaporation

Explanation- Evaporation always results in the cooling effect.

Q.10. Which of the following is not a form of matter ?

(a) Atom (b) Water
(c) Humidity (d) Electron

Ans.-(c) Humidity

Explanation-Humidity is a property of matter but not matter itself because it does not has mass and occupies space.

Q.11. Which of the following causes the temperature of a substance to remain constant whene it is undergoing a change in its state ?

(a) Latent heat (b) Lattice energy
(c) Loss of heat (d) None of these

Ans.-(a) Latent heat

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Explanation-Due to latent heat, the temperature of the substances remains constant when they undergo a change in their state.

Q.12. Which of the following statements is correct ?

(a) Materials existing as liquids at room temperature have their melting and boiling points lower than the room temperature.

(b) The transition of a substance from solid to liquid state is called sublimation.

(c) To convert a temperature on the Celsius scale to Kelvin scale 273 is subtracted from the given temperature.

(d) The density of ice is less than that of water.

Ans.-(d) The density of ice is less than that of water.

Explanation- The density of ice is less than that of water. It is the reason why ice floats over water.

Q.13. Which of the following statement is not true regarding the characteristic of matter ?

(a) Particles of a matter move randomly in all the directions.

(b) Kinetic energy of the particles increases with a rise in temperature.

(c) Kinetic energy of the particles of all maters remains the same at a given temperature.

(d) Particles of matter diffuse into each other on their own.

Ans.-(c) Kinetic energy of the particles of all maters remains the same at a particular temperature.

Explanation-Kinetic energy of the particles of all maters are different at a given temperature.

Q.14. In which of the following conditions, the distance between the molecules of a gas would increase ?

(i) Increasing pressure on gas contained in a closed container

(ii) Some gas leaking out of the container

(iii) Increasing the volume of the container of gas

(iv) Adding more gas to the container without increasing the volume of the container

(a) (i) and (iii) (b) (i) and (iv)

(c) (ii) and (iii) (d) (ii) and (iv)

Ans.-(c) (ii) and (iii)

Explanation- In case of leaking out of the gas from the container and increase of volume of the container the distance between the molecules of the gas would increase.

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Q.15. At higher altitudes-

(a) Boiling point of a liquid decreases
(b) Boiling point of a liquid increases
(c) No change in boiling point occurs
(d) Melting point of solid increases

Explanation- At higher altitudes the boiling point of a liquid gets decreased.

Q.16. The boiling point of alcohol is 78^0C. What will be its value on Kelvin scale-

(a) 373 K (b) 351 K
(c) 375 K (d) 78 K

Ans.-(b) 351 K

Explanation- Temperature in Kelvin = (273 + 78) = 351 K

Q.17. The boiling point of water on Celsius and Kelvin scale respectively are-

(a) 373, 273 (b) 0, 273
(c) 273, 373 (d)100, 373

Ans.-(d)100, 373

Explanation- The boiling point of water is 100^0C.
This temperature in Kelvin = (273 + 100) K = 373 K

Q.18. The freezing point of water on Celsius and Kelvin scale respectively are-

(a) 373, 273 (b) 0, 273
(c) 273, 373 (d)100, 373

Ans.-(b) 0, 273

Explanation- The boiling point of water is 0^0C.
This temperature in Kelvin = (273 + 0) K = 273 K

Q.19. When a gas jar filled with air is placed upside down on another gas jar filled with bromine vapours, the red-brown vapours of bromine from the lower gas jar goes upwards into the jar containing air. This experiment shows that-

(a) Air is heavier than bromine
(b) Both air and bromine have the same density
(c) Bromine is heavier than air
(d) Bromine is not heavier than air as it is going upwards against gravity

Ans.-(c) Bromine is heavier than air

Explanation-When a gas jar filled with air is placed upside down on another gas jar filled with bromine vapours, the red-brown vapours of bromine from the lower gas jar goes upwards into the jar containing air. This experiment shows that Bromine is heavier than air.

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Q.20. When water freezes to form ice at 0°C, then it-

(a) Absorbs heat
(b) Releases heat
(c) Neither absorbs nor releases heat
(d) Absorbs 3.34×10^5J/kg of heat

Ans.-(b) Releases heat

Explanation- Freezing of water is an exothermic process where heat is released.

Q.21. Which one of the following set of phenomena would increase on raising the temperature ?

(a) Diffusion, evaporation, compression of gases
(b) Evaporation, compression of gases, solubility
(c) Evaporation, diffusion, expansion of gases
(d) Evaporation, solubility, diffusion, compression of gases

Ans.-(c) Evaporation, diffusion, expansion of gases

Explanation- Evaporation, diffusion and expansion of gases increase with rise of temperature but solubility and compression of gases decrease with rise of temperature.

Q.22. The change of water into water vapour below its boiling point is called-

(a) Evaporation (b) Condensation
(c) Boiling (d) None of the above

Ans-(a) Evaporation

Explanation-The change of water into water vapours below its boiling point is called the evaporation of water.

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