Chapter-1

Worksheet-1

Q.1. In which of the following conditions, the distance between the molecules of hydrogen gas would increase?

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

(ii) Some hydrogen gas leaking out of the container

(iii) Increasing the volume of the container of hydrogen gas

(iv) Adding more hydrogen 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)

Q.2 When a gas jar full of air is placed upside down on a gas jar full of bromine vapours, the red-brown vapours of bromine from the lower jar go upward into the jar containing air. In this experiment:

(a) Air is heavier than bromine

(b) Both air and bromine have the same density

(c) Bromine is heavier than air

(d) Bromine cannot be heavier than air because it is going upwards against gravity

Q.3. A form of matter has no fixed shape but it has a fixed volume. An example of this form of matter is

(a) Krypton

(b) Kerosene

(c) Carbon steel

(d) Carbon dioxide

Q.4. Which one of the following statements is not true?

(a) The molecules in a solid vibrate about a fixed position

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

(c) The molecules in a gas exert negligibly small forces on each other, except during collisions

(d) The molecules of a gas occupy all the space available

Q.5. The correct procedure of heating iron-sulphur mixture to prepare iron sulphide is: :

(a) Heat the powder mixture at the base of the test tube using a blue flame throughout.

(b) Heat the iron filings and sulphur mixture in the middle of the test tube using yellow flame throughout.

(c) Heat the powder mixture at the top of the test tube using an orange flame throughout.

(d) Heat the iron filings-sulphur mixture at 3/4 quarters of the test tube using a red flame throughout.

Q.6. When water at 0° C freezes to form ice at the same temperature of 0° C, then it:

(a) Absorbs some heat

(b) Releases some heat

(c) Neither absorbs nor releases heat

(d) Absorbs exactly 3.34×10^5 J/kg of heat

Q.7. When heat is constantly supplied by a burner to boiling water, then the temperature of water during vaporisation :

(a) Rises very slowly

(b) Rises rapidly until steam is produced

(c) First rises and then becomes constant

(d) Does not rise at all

Q.8. 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

Q.9. On converting 308 K, 329 K and 391 K to Celsius scale, the correct sequence of temperatures will be:
(a) 33°C, 56°C and 118°C
(b) 35°C, 56°C and 119°C
(c) 35°C, 56°C and 118°C
(d) 56°, 119°C and 35° C

Q.10. Which of the following phenomena always results in the cooling effect?

(a) Condensation

(b) Evaporation

(c) Sublimation

(d) None of these

Que-11 Explain why; diffusion occurs more quickly in a gas than in a liquid.

Que-12 When a crystal of potassium permanganate is placed at the bottom of water in a beaker, the water in the whole beaker turns purple on its own, even without stirring. This is an example of: (a) distribution(b) intrusion

Que-13 What do you understand by the term 'latent heat'? What are the two types of latent heat?

Que-14 Why is heat energy needed to melt a solid? What is this heat energy called?

Que-15 Why is solid carbon dioxide known as dry ice?

Que-16 Why does the temperature remain constant during the melting of ice even though heat is supplied continuously?

Que-17 Why does the temperature remain constant during the boiling of water even though heat is supplied continuously?

Que-18 Which contains more heat, 1 kg of ice of 0° C or 1 kg of water at 0° C? Give reason for your answer.

Que-19 Why does the temperature of a substance remain constant during the change of state?

Que-20 Why does all the water of the earth not get evaporated during hot summer days?