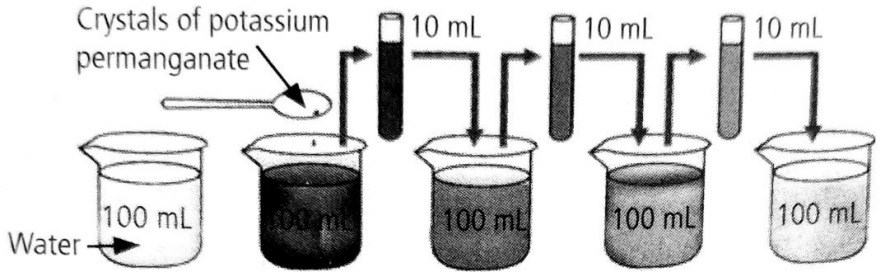
1. Consider the following experimental set-up.



The conclusions obtained from the above experiment are

I. particles of matter are in a state of continuous motion.

II. particles of matter have some spaces in between them.

III. particles of matter are very tiny.

The correct statement(s) are

(a) I and II (b) II and III (c) Only II (d) All of these

2. On arranging water, sugar and oxygen in increasing order of forces of attraction between their particles, which of the following will be the correct arrangement?

(a) Water, Oxygen, Sugar (b) Oxygen, Sugar, Water

(c) Sugar, Oxygen, Water (d) Oxygen, Water, Sugar

3. The state of matter which consists of super energetic particles in the form of ionized gases is called

(a) gaseous state (b) liquid state

(c) Bose-Einstein condensate (d) plasma state

4. Paraffin wax is used to make candles. In which states of matter can a burning candle exist?

(a) 1 and 2 (b) 1 and 3 (c) 2 and 3 (d) 1.2 and 3

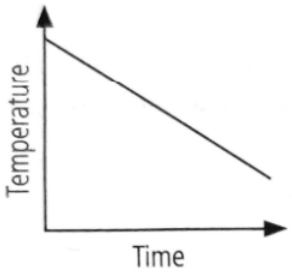
5. Gases are liquefied under

(a) high pressure, high temperature (b) high pressure, low temperature

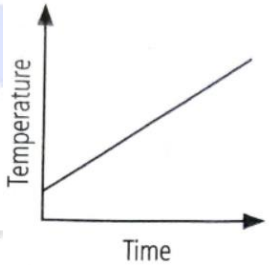
(c) low pressure, high temperature (d) low pressure, low temperature.

6. Which graph shows the temperature change as steam at $110^{\circ}C$ is cooled to $-10^{\circ}C$?

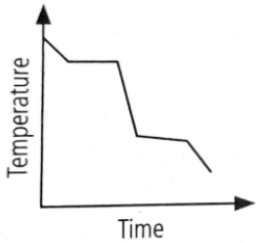
(a)



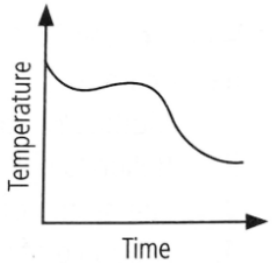
(b)



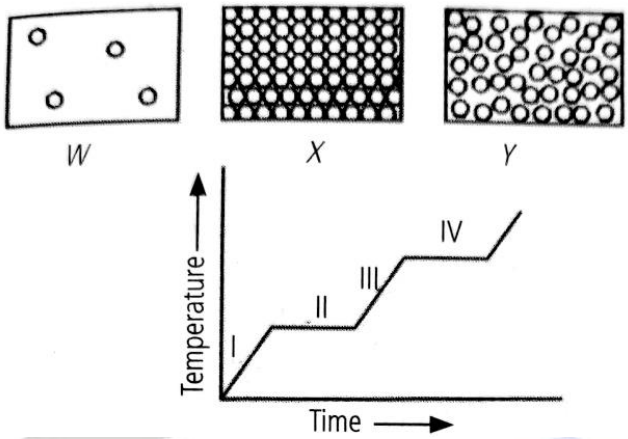
(c)



(d)



7. Diagrams W, X and Y show how the particles of a substance are packed at different temperatures.



The given graph shows changes in the state of a substance on heating. In which region of the graph would all the particles be packed as in n ?

(a) I (b) II (c) III (d) IV

8. Some crushed ice is put in a test tube and warmed. The ice melts because its particles
   (a) change their size
   (b) gain heat energy and escape
   (c) gain heat energy and become closer
   (d) gain heat energy and move away from their fixed positions.

9. Which word describes the following change?

$$I_{2(s)} \longrightarrow I_{2(g)}$$

(a) Boiling (b) Condensation (c) Evaporation (d) Sublimation

10. The doctors advise to put strips of wet cloth on the forehead of a person having high fever. Which phenomenon is involved?

(a) Sublimation (b) Evaporation (c) Condensation (d) Freezing

11. During evaporation process, the heat is
   (a) absorbed (b) evolved
   (c) first absorbed then evolved (d) initially evolved and then absorbed.

12. Which one of the following sets 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

13. During summer, water kept in an earthen pot becomes cool because of the phenomenon of

(a) diffusion (b) transpiration (c) osmosis (d) evaporation.

14. Which condition out of the following will increase the evaporation of water?
   (a) Increase in temperature of water (b) Decrease in temperature of water
   (c) Less exposed surface area of water (d) Adding common salt to water

Assertion-Reason Codes:

(a) If both Assertion and Reason are true and Reason is the correct explanation of Assertion.

(b) If both Assertion and Reason are true and Reason is not the correct explanation of Assertion.

(c) If Assertion is true but Reason is false.

(d) If both Assertion and Reason are false.

15. Assertion: The intermolecular forces in solid state are stronger than those in the liquid state.
Reason: The space between the particles of matter is called intermolecular space.

16. Assertion: The conversion of a gas directly into solid is called condensation.
Reason: Naphthalene leaves residue when kept open for some time.

17. Assertion: The melting point of ice is $0^{\circ}C$ or $273.15K$.
Reason: The conversion of a solid into liquid is also called fusion of the solid.

18. Assertion: Liquids diffuse easily as compared to gases.
Reason: Intermolecular forces are greater in gas.

19. Assertion: Diffusion rate of oxygen is smaller than nitrogen.
Reason: Molecular size of nitrogen is smaller than oxygen.

20. Assertion: A gas can be easily compressed by applying pressure.
Reason: Since the interparticle spaces in the gaseous state are very small, they cannot be decreased by applying pressure.