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Answers Key:

4 Marks

1. In the container, the gaseous particles are free to move.These move at high speed and collide with other particles or walls of the container.The bombardment of the particles on the walls of the container produces a steady force that depends on the temperature.This force per unit area is called as pressure of the gas.
2. common properties of liquids and gases:
   (a) Both have fluidity.
   (b) Both attain the shape of the container.
3. (i) Liquid
   (ii) Gas
4. (i) Compressibility : wood
   (ii) Particle motion : wood
   (iii) Rigidity: air

3 Marks

5. Matter exists in three states:
   (i) Solid: A solid has a definite volume but its shape is not definite, it will depend on the shape of the container in which it is contained,e.e., 5ml each of water, petrol, alcohol kept in different types of containers will have different shapes but the volume of each of these liquids remains the same, i.e., 5ml
   (ii) Gas: A gas has neither a definite shape nor a definite volume,e.g., hydrogen, air, nitrogen taken in different containers have the shape and volume of the containing vessel.
6. At $0^{\circ}C$, when the ice melts, the temperature of the system does not change through the heat is continuously supplied.The given heat is used up in overcoming the force of intermolecular attraction.This results in the conversion of ice into water.As this heat energy is absorbed by ice without any rise in temperature of the system, this heat is considered as hidden in the system and is known as latent heat.
7. Water exists as solid water (ice), liquid water (water) and gaseous water (steam).The melting point of ice is 0^0C.It does not mean that water is not available as solid at 0^0C.It only means that at this temperature ice starts melting and at 0^0 C both ice and water are in equilibrium.Similarly the boiling point of water as 100^0 C does not mean that at this temperature there is no liquid water present.At 100^0C actually both water and steam are in equilibrium.At these temperatures with a little change in energy one can move to either of the stats.This energy is called latent heat.The word 'latent' is used to signify that this heat is taken up or given by the system but not shown by rise or fall in temperature.
8. (i) During the interconversion of a solid into a liquid and liquid into gas on increasing temperature, the kinetic energy of the molecules increases and force of attraction among molecules decreases and vice-versa.
   (ii) (a)Rate of diffusion, Solid < liquid < gas
   (b)Particles motion, Solid < liquid < gas.
9. (i) Temperature and pressure determine the state of a substance.
   (ii) 30^{o}C = 273 + 30 = 303K
   (iii) Water droplets are observed on glass tumbler because water vapours present in the air get condensed on the cold surface of the glass which appears as water droplets.
10. (i) Evaporation of liquid produces cooling because liquid takes away the heat from the surroundings, thereby producing a cooling effect.
    (ii) If humidity is high, then air is already saturated with water vapour, i.e. it has a lot of water vapour. Therefore, it will not take more water vapour easily. Hence, rate of evaporation decreases.
    (iii) Sponge has minute holes in which air is trapped. The material is also not so rigid. On pressing this, air is expelled out, that is why, it can be compressed, but it is solid as it has a definite shape and volume and does not change its shape unless compressed.

2 Marks

11. A substance occuring in nature or coming in use in day to day life is called matter.Examples are naturally occuring minerals, plants to paper, chalk, coke, food etc.a matter may be available in varieties of shape, size, colour and odoour.Matter is thus anything that has and occupies space.
12. Air is matter because it has mass and occupies space.
13. A gas is highly compressible and a large quantity of it can be compressed to a small manageable volume.Therefore, natural gas is compressed and is supplied for use by vehicles in the name of CNG(compressed natural gas)
14. In the container, the gaseous particles are free to move.These move at high speed and collide with other particles or walls of the container.The bombardment of the particles on the walls of the container produces a steady force that depends on the temperature.This force per unit area is called as pressure of the gas.
15. Blue colour of copper sulphate spreads faster in beaker A, i.e., Diffusion is faster in hot water.
16. Salt and sugar consist of small particles which have fixed shape.

Multiple Choice Question

17. (d) Condensation.
18. (c) temperature lower than boiling point
19. (b) condensation
20. (b) solid changes into liquid