Dr. M.K.K. ARYA MODEL SCHOOL, MODEL TOWN, PANIPAT

CLASS 9 (2018-19)

ASSIGNMENT

MATTER IN OUR SURROUNDINGS

Very short answer type question (1 mark)

Q1. Write 2 examples of diffusion?

Ans. Smell from incense stick ,cooked food ,perfume etc.

Q2. Define:

a)sublimation: It is a process in which solid is directly changed into vapours on heating and vapours are converted directly to solid on cooling.

b)condensation : It is a process of changing gas (vapours) to liquid on cooling.

c)diffusion: Intermixing of particles of two or more different substances on its own is termed as diffusion.

d)absolute temperature: The temperature on Kelvin scale is called absolute temperature.

e) latent heat of fusion: It is heat required during conversion of solids to liquid state without changing temperature.

f)evaporation: It is a process in which liquid changes into vapour even below its boiling point.

g)humidity: humidity is defined as amount of water vapours present in air.

h)density: It is defined as mass per unit volume.

Q3. Which type of gases move upward?

Ans. Gases with low density.

Q4. In which state particles have maximum kinetic energy?

Ans. Gaseous state.

Q5. Which property of gases has not been possessed by solids?

Ans. Solids do not diffuse.

Solids do not exert pressure.

Q6. What is value of 23^0C on Kelvin scale?

Ans. $K = {}^0C + 273$

23+273=296K

Q7. Convert 310 K to Celsius scale?

Ans. 310-273= 37^0C

Q8. Define fluidity?

Ans. Property of liquids to flow is called fluidity.

Q9. Which state of matter was discovered by S.N bose?

Ans. Bose Einstein Condensate (BEC).

Q10.We feel cooler under a fan when we perspire?

Ans. Under a fan, water present as perspiration is evaporated faster after taking energy from our body and hence we feel cooler.

Q11. Give 2 examples of sublimates?

Ans. Naphthalene balls, benzoic acid, iodine.

Q12. In which process ,a solid is directly converted into gaseous state on heating?

Ans.sublimation.

Q13. What is dry ice?

Ans. Solid carbondioxide is known as dry ice.

Q14. At which temperature energy of ice and water is same?

Ans.273 K

Q15. While making 'matka kulfi',which compound is added in water to lower its temperature?

Ans. Sodiumchloride.

Q16. Which state of matter is used in neon sign lamps?

Ans. Plasma state.

short answer type question (2 or 3 mark)

Q14. Explain the effect of heat on rate of diffusion?
Ans. On increasing heat, kinetic energy of particles increases hence rate of diffusion also increases.
Q15.How will you show that there is space between particles of gas ?
Ans. When sugar or potassium permanganate crystals are dissolved in water they disappear and volume of the solution does not change. This shows that there were spaces between water molecules and potassium permanganate.
Q16. Liquids generally have lower density than that of solid but ice floats in water. Explain?
Ans. When water is solidified to make ice, it forms the crystal lattice in which water molecules come closer due to chemical bonding.water has maximum density at 4^0C. when it is cooled further density becomes low,due to which it floats.
Q17. The kinetic energy of gases is more than that of solids .why?
Ans. The weaker forces of attraction and large interparticle distance between gas particles, the particles move in all possible direction. Due to their movement,gases have larger kinetic energy than that of solids.
Q18. How does red ink get evenly distributed in water?
Ans. Because of dispersion red ink is distributed in water evenly.
Q19. Name the factors which affect evaporation?
Ans. Temperature, surface area , humidity, wind speed,nature of liquids.
Q20. How does evaporation cause cooling?
Ans. During evaporation liquid is converted into gaseous form for which energy is required. This is taken from atmosphere which causes cooling.
Q21. How does water kept in earthern pots become cool during summers?
Ans. The small holes or capillaries are present in walls of earthern pots. So water oozes out slowly on outer surface of pots and evaporates. The heat energy needed for evaporation is taken from water kept in earthern pot. Therefore water kept in earthern pot becomes cold.
Q22. How the impurities present in liquid affect its boiling point?
Ans. Addition of impurities increases its boiling point.
Q23. Surgeons often spray some ether on skin before performing minor surgery.why?
Ans. Surgeons often spray some ether on skin before performing minor surgery because ether has very low boiling point and when applied on skin it evaporates by taking heat from the skin and as a result very low temperature on skin is produced such that patient does not feel much pain.
Q24. Why spray containing ethylchloride is used when player gets injured during the game?
Ans. Ethylchloride has very low boiling point and evaporates quickly by taking heat from the injured part of body, making portion very cool and numb.
Q25. Why ice is applied on burnt part of skin?
Ans. When any part of gets burnt its temperature increases. At that time if we apply ice or cold water on burnt part of body ,it takes away heat from that part and we feel less pain.

Q26. When some acetone or ethylalcohol is placed on our palm we feel cool.why?
Ans. We feel cool due to evaporation of acetone or ethyl alcohol takes heat from our palm.
Q27. Why we sprinkle water on the roof or open ground in summer?
Ans. Sprinkling water on roof or open ground water is evaporated ,keeping surroundings cool.
Q28. What is graham's law of diffusion?
Ans. Graham's law of diffusion states that rate of diffusion is inversely proportional to density.
Q29. Why should we wear cotton clothes in summer?
Ans. Cotton being good absorber of water helps in absorbing sweat and exposing to atmosphere for easy evaporation.

Long answer type question (5 mark)

Q30. Differentiate between solids, liquid and gases?
Q31. Explain the effect of temperature and pressure on states of matter?
Q32. Differentiate between evaporation, boiling, melting, vaporisation and sublimation giving suitable example?