

MATTER IN OUR SURROUNDINGS

Short answer type Questions

1. Explain Brownian motion with the help of movement of pollen grains in water.
2. CO_2 gas is heavier than both N_2 and O_2 . Why does not it form lower layer in atmosphere.
3. Why ice floats on water.
4. Why ice is more effective in cooling than water at 273 K.
5. The melting point of two solids X and Y are 300 K and 400 K respectively. Which has more interparticle forces?
6. Kelvin scale is better than Celcius scale for expressing the temperature why?
7. Why do gases diffuse very fast ?
8. Arrange the following substances in the increasing order of interparticle forces. Water, common salt, nitrogen.
9. Give four characteristics associated with the gaseous state.
10. What is common in the three states of matter ?
11. Define condensation.
12. What is latent heat of fusion ?
13. Name one property which is shown by naphthalene and not by sodium chloride.
14. Why do we rub ice on burnt part of the body to feel less pain?
15. Explain the interconversion of states of matter.
16. What is relation between pressure in atmospheres and pressure in pascals ?
17. Distinguish between boiling and evaporation.
18. Explain how gases can be liquefied ?
19. Explain the factors affecting the rate of evaporation.
20. Why do we sweat more on a humid day ?
21. What is the purpose of sipping coffee from a saucer instead of sipping from a glass or cup ?
22. Arrange the following in increasing order of density.
Air ,exhaust from chimney, iron honey, water ,chalk and cotton.

True/False questions

State whether the following statements are true or false.

1. Substance has its melting point just below the room temperature its physical state will be gas.
2. Thermal expansion of gaseous state is much higher than that of solids and liquids.
3. 1atm pressure is always equal to 760 cm of Hg.
4. Higher the melting point stronger the forces of attraction in compound.
5. Water boils at lower temperature than 100°C at higher altitude.

6. Sea water boils at temperature below 100°C .
7. Desert coolers cools better on a hot dry day.
8. One feels more cool after cold water bath than hot water bath.
9. The high diffusibility of gases is due to high intermolecular forces of attraction.
10. When ice melts to water then heat is absorbed.

Fill in the blanks

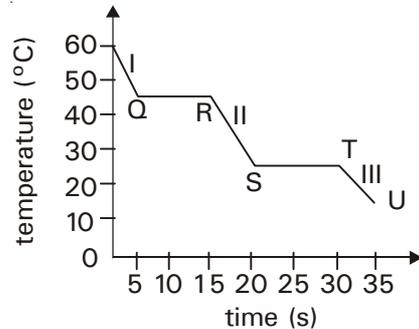
1. The space occupied by substance is called _____
2. Freezing point of water is _____
3. Steam contains more heat in form of _____ heat.
4. Greater the surface area more is the rate of _____
5. Dry ice is an example of _____
6. SI unit of temperature is _____
7. The process of changing a liquid into solid state is known as _____
8. Increase in pressure decreases the volume of the _____
9. The temperature of liquid before heating was recorded as 25 and after heating was recorded as 300K. The difference in temperature is _____
10. At depth of 100 feet below sea level the value of total pressure experienced by diver is _____

Objective type questions

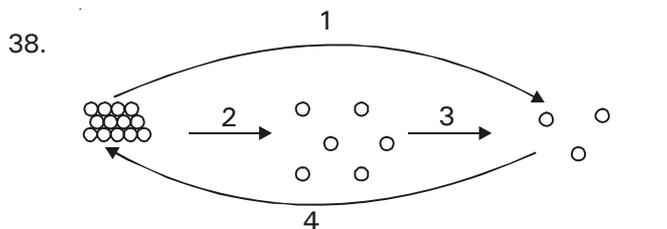
1. Latent heat of vaporisation is used to
 - (1) overcome the forces of attraction between the molecules in solid state
 - (2) increases the kinetic energy of molecules in liquid state
 - (3) overcome the forces of attraction between the molecules in liquid state
 - (4) increases the kinetic energy of molecules in vapour state
2. Evaporation is an example of which of the following process?
 - (1) Exothermic
 - (2) Endothermic
 - (3) Photochemical
 - (4) Biochemical
3. Which of the following gas will diffuse more rapidly
 - (1) LPG
 - (2) CO_2
 - (3) H_2
 - (4) N_2
4. If we add common salt in water then its freezing point
 - (1) increases
 - (2) decreases
 - (3) remains constant
 - (4) can be predicted
5. Which of the following has more heat content?
 - (1) 10 g of ice at 0°C
 - (2) 10 g of water at 0°C
 - (3) Both have same heat content
 - (4) Their heat content can't be compared

6. In which of the following conversion H_2O molecules lose speed?
 (1) Ice \rightarrow water (2) Ice \rightarrow steam
 (3) Steam \rightarrow ice (4) Water \rightarrow steam
7. A flask containing a liquid x is heated until it boils and start escaping from flask. The incorrect statement about the particles of the substance during the process is
 (1) energy is absorbed by particles in liquid x
 (2) the particles lose kinetic energy
 (3) eventually the particles throughout the liquid have enough energy to overcome the forces holding them together
 (4) both (1) and (2)
8. Match column-I with column-II
 a. Particles move randomly i. water
 b. Layers can slide over each other ii. sugar
 c. Changes directly to gaseous state iii. Nitrogen
 d. Particles are not free to move iv. Ammonium chloride
 (1) a-iii, b-i, c-ii, d-iv
 (2) a-iii, b-i, c-iv, d-ii
 (3) a-i, b-ii, c-iii, d-iv
 (4) a-i, b-ii, c-iv, d-iii
9. A pressure of 1520 mm of Hg is equal to
 (1) 1.5 atm (2) 2 atm
 (3) 1 atm (4) 2.5 atm
10. Liquids like ether and acetone are kept in cool places because
 (1) both have high boiling point
 (2) the rate of evaporation increases with surface area
 (3) both are volatile liquids with low boiling point
 (4) both (2) and (3)
11. Which of the following is/are rigid(s) ?
 (1) Solids (2) Liquids
 (3) Gases (4) Both (2) and (3)
12. Which of the following statements is/are correct ?
 (1) Intermolecular forces of attraction is solids are maximum.
 (2) Intermolecular forces of attraction is gases are minimum.
 (3) Intermolecular spaces in solids are minimum.
 (4) All of the above
13. What happens to the volume of the solution when small amount of sugar is dissolved in it ?
 (1) Volume will increase.
 (2) Volume will decrease.
 (3) Volume first increases then decreases.
 (4) No change in volume.
14. Which of the following is not an example of matter?
 (1) Air (2) Feeling of cold
 (3) Dust (4) None of these
15. Which of the following statement is incorrect?
 (1) Solids have fixed shape and fixed volume.
 (2) Liquids can be compressed easily, but not gases.
 (3) The particles of solids have negligible kinetic energy.
 (4) Property of diffusion is maximum in the gaseous state.
16. Which of the following is/are application(s) of high compressibility of gases ?
 (1) L.P.G. is used as fuel in homes for cooking food.
 (2) Oxygen cylinders are supplied to hospitals.
 (3) C.N.G. is used as fuel in vehicles.
 (4) All of these
17. Which of the following property is not shown by the liquid state ?
 (1) Particles are loosely packed in the liquid state.
 (2) Fluidity is the maximum in the liquid state.
 (3) Liquids can be compressed.
 (4) Liquids take up the shape of any container in which these are placed.
18. On changing which of the following, the states of matter can be changed ?
 (1) Temperature (2) Pressure
 (3) (1) & (2) both (4) None of these
19. The boiling point of alcohol is $78^{\circ}C$. What will be the temperature in Kelvin scale ?
 (1) 373 K (2) 351 K
 (3) 375 K (4) 78 K
20. In sublimation process -
 (1) solid changes into liquid
 (2) liquid changes into gas.
 (3) solid changes directly into gas.
 (4) None of these
21. When a liquid starts boiling, the further heat energy which is supplied -
 (1) is lost to the surrounding as such.
 (2) increasing the temperature of the liquid.
 (3) increases the kinetic energy of the liquid.
 (4) is absorbed as latent heat of vaporisation by the liquid.

22. The electric bulb on long use forms a black coating on its inner surface due to
- (1) melting of tungsten
 - (2) sublimation of tungsten
 - (3) oxidation of tungsten
 - (4) reduction of tungsten
23. Which of the following will show the property of sublimation?
- (1) Common salt
 - (2) Sugar
 - (3) Camphor
 - (4) Potassium nitrate
24. Dry ice means -
- (1) solid ammonia
 - (2) solid carbon dioxide
 - (3) solid sulphur dioxide
 - (4) normal ice
25. On a hot humid day rate of evaporation -
- (1) is more
 - (2) is less
 - (3) initially more, later on less
 - (4) remains same.
26. During evaporation, particles of a liquid change into vapours only -
- (1) from the surface
 - (2) from the bulk.
 - (3) from both surface and bulk.
 - (4) neither from surface nor from bulk.
27. Rate of evaporation depends upon -
- (1) temperature
 - (2) surface area
 - (3) humidity
 - (4) All of these
28. Pressure of air at sea level is -
- (1) one atmosphere
 - (2) 76 cm of Hg
 - (3) 760 mm of Hg
 - (4) All of these
29. One atmosphere is equal to -
- (1) 1.01×10^5 Pa
 - (2) 3.46×10^4 Pa
 - (3) 1 Pa
 - (4) 10 Pa
30. In which phenomenon water changes into water vapour below its boiling point ?
- (1) Evaporation
 - (2) Condensation
 - (3) Boiling
 - (4) No such phenomena exists
31. Which of the following is the correct increasing order of attraction between their particles?
- (1) Water, oxygen, sugar
 - (2) Oxygen, sugar, water
 - (3) Sugar, oxygen, water
 - (4) Oxygen, water, sugar
32. Gases can be liquefied by
- (1) increasing temperature and pressure
 - (2) increasing temperature and decreasing pressure
 - (3) decreasing temperature and increasing pressure
 - (4) decreasing temperature and pressure
33. The given graph represents the cooling curve of substance X.



- Which of the following statement is/are incorrect
- a. process I represents cooling of liquid state of X while process III involves cooling of solid state
 - b. the freezing point of substance X is 25°C
 - c. at 35°C the substance exist in solid state in
 - d. substance X exist both in gaseous and liquid form along the curve QR
- (1) a and c
 - (2) b and d
 - (3) c and d
 - (4) all are correct
34. All liquids have same
- (1) density
 - (2) viscosity
 - (3) solubility
 - (4) none of these
35. Which on of the following sets of phenomenon would increase on raising the temperature?
- (1) diffusion, evaporation, compression of gases
 - (2) evaporation, compression of gases, solubility
 - (3) evaporation, diffusion, compression of gases
 - (4) evaporation, solubility, diffusion, compression of gases
36. The property of flow is unique to fluids. Which one of the following statement is correct
- (1) only gases behaves like fluids
 - (2) gases and solid behaves like fluids
 - (3) gases and liquid behaves like fluids
 - (4) only liquid are fluids
37. High melting point of compound indicates
- (1) strong intermolecular forces
 - (2) kinetic energy of molecules is more
 - (3) speed of molecule is more
 - (4) compound can diffuse easily



The correct statement for the above process/are

- change 1 is carried out under high temperature and low pressure
 - change 4 is carried out under low temperature and high pressure
 - change 2 is carried out under low temperature and high pressure
 - change 3 is carried out under low temperature and high pressure
- (1) b & c (2) a & b
 (3) a, b & d (4) a, b & c
39. The force per unit area exerted by particles of the gas on walls of container is called
- atmospheric pressure
 - pressure of gas
 - kinetic energy of gas
 - density of gas

40. The water spilled on the floor evaporates faster than the water in glass due to
- increase in surface area
 - increase in temperature
 - increase in humidity
 - decrease in kinetic energy
41. The quantity of matter present in an object is called its
- weight (2) volume
 - mass (4) density
42. Which of the following statements is/are correct?
- Interparticle spaces are maximum in the gaseous state of a substance.
 - Particles which constitute gas follow a zig-zag path
 - Solid state is the most compact state of substance.
 - All are correct
43. Which of the following statements is false?
- Melting and freezing point of a substance are the same.
 - Evaporation of liquid takes place only at its boiling point.
 - Pure water has no taste.
 - Water allows sunlight to pass through it.
44. Fusion is the process of conversion of a
- liquid into a gas (2) solid into a gas
 - solid into a liquid (4) liquid into a solid

Answers

True / False	Fill in blanks	Objective questions
1. (F)	1. Volume	1. (3)
2. (T)	2. 0°C	2. (2)
3. (F)	3. latent	3. (3)
4. (T)	4. evaporation	4. (2)
5. (T)	5. sublimation	5. (2)
6. (F)	6. kelvin	6. (3)
7. (T)	7. freezing	7. (2)
8. (F)	8. gases.	8. (2)
9. (F)	9. 1K	9. (2)
10. (T)	10. 4atm	10. (3)
		11. (1)
		12. (4)
		13. (4)
		14. (2)
		15. (2)
		16. (4)
		17. (2)
		18. (3)
		19. (2)
		20. (3)
		21. (4)
		22. (2)
		23. (3)
		24. (2)
		25. (2)
		26. (1)
		27. (4)
		28. (4)
		29. (1)
		30. (1)
		31. (4)
		32. (2)
		33. (1)
		34. (4)
		35. (2)
		36. (3)
		37. (1)
		38. (3)
		39. (1)
		40. (1)
		41. (3)
		42. (4)
		43. (2)
		44. (3)