International Indian School Buraidah

Worksheet of the Year -2025-26

Class-9th Subject-Chemistry

Chapter # 2 Is, Matter around us pure

Q-A Choose the Correct Option-

1. Which of the following is not a pure substance?
a) Water
b) Air
c) Diamond
d) Gold
Answer: b) Air

2. The process of converting a solid directly into a gas without passing through the liquid state is called:
a) Condensation
b) Sublimation
c) Evaporation
d) Melting
Answer: b) Sublimation

3. What is the boiling point of pure water at standard atmospheric pressure?
a) 100°C
b) 0°C
c) 212°F
d) 373 K
Answer: a) 100°C

4. Which method is used to separate components of a mixture with different boiling points?
a) Filtration
b) Chromatography
c) Distillation
d) Sublimation
Answer: c) Distillation

5. Which of the following is a homogeneous mixture?
a) Orange juice with pulp
b) Sand and water
c) Saltwater
d) Oil and vinegar
Answer: c) Saltwater

6. The process of conversion of a gas directly into a solid without passing through the liquid state is called:
a) Deposition
b) Condensation
c) Sublimation
d) Solidification
Answer: a) Deposition

7. Which of the following methods is used to separate an insoluble solid from a liquid?
a) Distillation
b) Sublimation
c) Filtration
d) Chromatography
Answer: c) Filtration

8. Which of the following statements is true about a solution?
a) It is a heterogeneous mixture.

b) It contains only solute.
c) It has a fixed composition.
d) It cannot be separated by physical methods.
Answer: c) It has a fixed composition.
9. Which of the following is a compound?
a) Air
b) Carbon
c) Saltwater
d) Soil
Answer: c) Saltwater
10. The property of a substance to be hammered into thin sheets is called:
a) Ductility
b) Malleability
c) Solubility
d) Viscosity
Answer: b) Malleability
11. An example of a physical change is:
a) Rusting of iron
b) Burning of wood
c) Cooking an egg
d) Melting of ice
Answer: d) Melting of ice
12. Which of the following is a chemical change?
a) Boiling water
b) Dissolving sugar in water
c) Digesting food
d) Cutting paper
Answer: c) Digesting food
13. Which of the following is a heterogeneous mixture?
a) Vinegar
b) Milk
c) Soda water
d) Air
Answer: b) Milk
14. Which of the following substances has the highest boiling point?
a) Ethanol (alcohol)
b) Water
c) Petrol
d) Kerosene
Answer: b) Water
15. The process of separation of different components of a mixture into their original state is called:
a) Filtration
b) Evaporation
c) Sublimation
d) Decantation
Answer: b) Evaporation
16. The method used to separate colors in ink is called:
a) Filtration
b) Chromatography
c) Sublimation
d) Decantation
Answer: b) Chromatography

17. Which of the following is not a physical property of matter?
a) Color
b) Density
c) Flammability
d) Solubility
Answer: c) Flammability
18. Which of the following is an example of a pure substance?
a) Sea water
b) Sand
c) Oxygen gas
d) Colored candy
Answer: c) Oxygen gas
19. Which of the following is a mixture?
a) Hydrogen gas
b) Copper wire
c) Brass
d) Sodium chloride (table salt)
Answer: c) Brass
20. Which of the following methods is used to separate components of a mixture based on their particle size?
a) Distillation
b) Filtration
c) Evaporation
d) Sedimentation
Answer: b) Filtration
21. The process of converting a liquid into a gas is called:
a) Melting
b) Boiling
c) Condensation
d) Freezing
Answer: b) Boiling
22. Which of the following is a pure substance?
a) Air
b) Soil
c) Mercury
d) Vinegar
Answer: c) Mercury
23. The separation technique used to separate a mixture of oil and water is:
a) Filtration
b) Distillation
c) Decantation
d) Chromatography
Answer: c) Decantation
24. The minimum number of phases that can exist in a heterogeneous system is:
a) 1
b) 2
c) 3
d) 4
Answer: b) 2
25. Which of the following substances does not exist in a pure state in nature?

a) Gold
b) Oxygen
c) Salt
d) Air

Answer: d) Air

Q-B Assertion and Reason Based Questions-

Directions: In the following questions, a statement of assertion (A) is followed by a statement of reason (R). Mark the correct choice as:

(a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
(b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
(c) Assertion (A) is true but reason (R) is false.
(d) Assertion (A) is false but reason (R) is true.

Q.1. Assertion : When a beam of light is passed through a colloidal solution placed in a dark place the path of the beam becomes visible.

Reason : Light gets scattered by the colloidal particles.

Answer: (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Light is scattered by colloidal particles, making the path of the beam visible.

Q.2. Assertion : A mixture of benzoic acid and naphthalene can be separated by crystallization from water.

Reason : Benzoic acid is soluble in hot water but naphthalene is insoluble in hot water.

Answer: (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).

Benzoic acid is soluble in hot water but naphthalene is not soluble.

Q.3. Assertion : A solution of table salt in a glass of water is homogeneous.

Reason : A solution having different composition throughout is homogeneous.

Answer: (c) Assertion (A) is true but reason (R) is false.

A solution having same composition throughout is homogeneous.

Q.4. Assertion : A mixture of sugar and benzoic acid can be separated by shaking with ether.

Reason : Sugar is insoluble in water.

Answer: (c) Assertion (A) is true but reason (R) is false.

Sugar is soluble in water and insoluble in ether.

Q.5. Assertion : In sublimation, a substance changes directly from solid to vapour without passing through
liquid state and vice-versa.

Reason : Distillation involves two processes i.e., vaporisation and condensation.

Answer: (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
Both are definitions of sublimation and distillation respectively.

Q.6. Assertion : True solution exhibits Tyndall effect.
Reason : Particles are very large in size.
Answer: (d) Assertion (A) is false but reason (R) is true.
True solutions do not exhibit Tyndall effect since the particle size is very small to scatter light.

Q.7. Assertion : Colloidal solutions are stable and the colloidal particles do not settle down.
Reason : Brownian movement counters the force of gravity acting on colloidal particles.
Answer: (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
Due to constant movement of particles colloidal particles do not settle down.

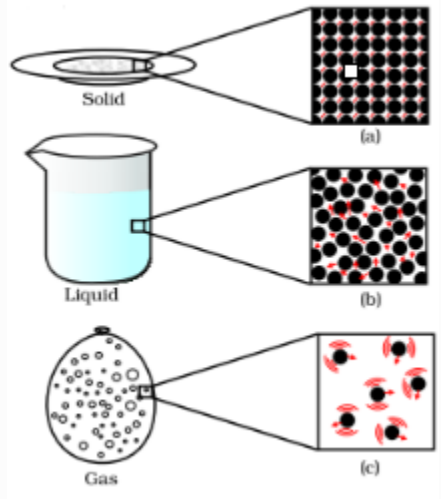
Q.8. Assertion : A solution of table salt in a glass of water is homogeneous.
Reason : A solution having different composition throughout is homogeneous.
Answer: (c) Assertion (A) is true but reason (R) is false.
A solution having same composition throughout is homogeneous.

Q.9. Assertion : Impure benzoic acid can be purified by sublimation.
Reason : Benzoic acid sublimes on heating.
Answer (a) Both assertion (A) and reason (R) are true and reason (R) is the correct explanation of assertion (A).
Benzoic acid sublimes on heating while impurities do not.

Q.10. Assertion : Tyndall effect is an optical property.
Reason : Electrophoresis is an electrical property.
Answer (b) Both assertion (A) and reason (R) are true but reason (R) is not the correct explanation of assertion (A).
Scattering of light by colloidal particles is an optical activity. Coagulation of colloidal particles under an electrical field is an electrical property.

Q-C Read the passage and answer any four questions:
Gases are highly compressible as compared to solids and liquids. The liquefied petroleum gas (LPG) cylinder that we get in our home for cooking or the oxygen supplied to hospitals in cylinders is compressed gas. Compressed natural gas (CNG) is used as fuel these days in vehicles. The liquid takes up the shape of the container in which they are kept. Liquids flow and change shape, so they are not

rigid but can be called fluid. Solids and liquids can diffuse into liquids. The aquatic animals can breathe underwater. The rate of diffusion of liquids is greater than solid.



1. Why Compressed natural gas (CNG) is used as fuel these days in vehicles?
    1. due to its high compressibility
    2. large volumes of a gas can be compressed into a small cylinder
    3. transported easily
    4. all of these
2. liquids have no fixed _____ but have a fixed_____ .
    1. shape, volume
    2. volume, shape
    3. shape, size
    4. size, shape
3. The aquatic animals can breathe underwater due to
    1. the presence of dissolved carbon dioxide in water
    2. the presence of dissolved oxygen in the water
    3. the presence of dissolved Nitrogen in the water
    4. all of these
4. The rate of diffusion of liquids is greater than solid due to
    1. liquid particles move freely
    2. liquid have greater space between each other
    3. both (a) and (b)
    4. none of these
5. The property of flow is unique to fluids. Which one of the following statements is correct?
    1. Only gases behave like fluids
    2. Gases and solids behave like fluids
    3. Gases and liquids behave like fluids
    4. Only liquids are fluids

Answer Key:

1. (d) all of these
2. (a) shape, volume
3. (b) the presence of dissolved oxygen in the water
4. (c) both (a) and (b)
5. (c) Gases and liquids behave like fluids