



## CHEMISTRY

### BOOKS - PEARSON IIT JEE FOUNDATION

#### CLASSIFICATION OF MATTER

##### Test Your Concepts Fill In The Blanks

1. In a \_\_\_\_\_ properties of the constituents are retained.



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2. A mixture of alcohol and water is an example of \_\_\_\_\_  
mixture .



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3. A substance which is formed by the chemical combination of two or more elements is called a \_\_\_\_\_ .



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4. Boiling point is the temperature at which \_\_\_\_\_ is converted to \_\_\_\_\_ at one atmospheric pressure.



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5. Non-metals usually exist in \_\_\_\_\_ state.



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6. \_\_\_\_\_ show the properties of metals and non-metals.



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7. With an increase in the surface area of a liquid, the rate of evaporation \_\_\_\_\_ .



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8. The conversion of a liquid to its solid state on cooling is called \_\_\_\_\_ .



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9. During freezing heat is \_\_\_\_\_ .



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10. Atomicity of ozone is \_\_\_\_\_ .



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**Test Your Concepts Select The Correct Alternativ**

1. Generally metals

- A. are solids
- B. are good conductors of heat
- C. have high tensile strength
- D. All the above



**Answer: D**



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2. A mixture of chalk powder and ammonium chloride can be separated by

- A. distillation
- B. evaporation
- C. filtration
- D. sublimation

**Answer: D**



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3. Identify the soft metal among the following

A. Iron

B. Aluminium

C. Magnesium

D. Potassium

**Answer: D**



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4. Which among the following is a bad conductor of electricity?

A. Zinc

B. Copper

C. Aluminium

D. Phosphorus

**Answer: D**



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5. The smallest particle of an element which may or may not have independent existence is called a/an

A. atom

B. molecule

C. compound

D. ion

**Answer: A**



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6. Which among the following is an element?

A. Calcium oxide

B. Common salt

C. Ozone

D. Water

**Answer: C**



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7. Evaporation is the process of conversion of

A. a liquid to its gaseous state below the boiling point of the substance

B. a liquid to its gaseous state at the boiling point of the substance

C. a liquid to its liquid state at the melting point of the substance

D. a liquid to its liquid state below the melting point of the substance

**Answer: A**



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**8.** The most convenient way of separating sawdust from water is

A. distillation

B. evaporation

C. filtration

D. sedimentation and decantation

**Answer: C**



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**9. Which among the following statements is true?**

A. Compounds are heterogeneous in nature.

B. The proportion of constituent elements in a compound is fixed.

C. The constituent elements retain their properties in a compound.

D. The formation of compound is a physical process.

**Answer: B**

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**10.** Which of the following is a heterogeneous mixture?

A. A mixture of water and sugar

B. A mixture of water and common salt

C. A mixture of water and saw dust

D. A mixture of water and glucose

**Answer: C**

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11. Which among the following is a heterogeneous mixture ?

- A. Soda water
- B. Liquid ammonia
- C. Milk
- D. Sugar water

**Answer: C**



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12. Which among the following is a pure substance?

- A. Dilute sulphuric acid
- B. Concentrated sulphuric acid



C. Aqueous NaCl

D. Molten NaCl

**Answer: D**



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**13.** Identify the true statement among the following:

A. Gases are highly compressible and diffuse very easily.

B. Gases are highly compressible and possess strong forces.

C. Solid molecules are closely packed and highly compressible.

D. Solid molecules are loosely packed and possess strong forces.

**Answer: A**



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**14. Property exploited in the usage of perfumes**

A. compressibility of gases

B. diffusion of gases

C. expansibility of gases

D. Both (3) and (2)

**Answer: D**



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15. Baking soda ( $NaHCO_3$ ) is a compound because

- A. the constituents retain their properties.
- B. the constituents can be separated by physical methods.
- C. the constituents are combined chemically.
- D. it is heterogeneous in nature.

**Answer: C**



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16. Which among the following pairs possess low melting points ?

- A. Magnesium, mercury

B. Mercury, manganese

C. Sodium, potassium

D. Calcium. Manganese

**Answer: C**



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**17.** A form of which of the following non-metal is the hardest substance ?

A. Phosphorus

B. Sulphur

C. Iodine

D. Carbon

**Answer: D**



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**18.** Preparation of salt from sea water involves

A. evaporation

B. filtration

C. sedimentation and decantation

D. sublimation

**Answer: A**



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19. Arrange the following in a proper sequence for the separation of constituents of gun powder

(a) Carbon disulphide is added to the mixture

(b) Carbon powder is separated

(c) Residue is filtered

(d)  $KNO_3$  is separated from its aqueous solution by heating it

(e) Mixture is filtered and hot water is added to the residue

A. aedbc

B. aecbd

C. abcd

D. None of these

**Answer: B**



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20. The steps involved in the separation of camphor and sand from mixture are given below. Arrange them in a proper sequence.

(a) The wet cloth is put over the funnel and the stem is closed with cotton plug

(b) The mixture of camphor and sand is taken in the china dish and inverted funnel is kept on it.

(c) the vapours are cooled and condensed to form the same solid and sand left behind in the dish

(d) The mixture is heated gently where the vapours of camphor is formed

A. bcda

B. dabc

C. badc

D. cdbac

Answer: C

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## Test Your Concepts Match The Column

Column A		Column B	
A. Distillation	( )	a. One of the component goes into vapour state on heating	
B. Filtration	( )	b. Separation of mixture by evaporation and subsequent condensation	
C. Sedimentation	( )	c. Insoluble solids can be separated from the liquid	
D. Sublimation	( )	d. Mixture having heavier solid particles are allowed to settle and are separated from clear solution	
	( )	e. Mixture of sand and iodine	

1. \_\_\_\_\_

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Column A		Column B	
A.	Atom ( )	a.	Takes the shape of the container
B.	Solid ( )	b.	Smallest particle of the matter
C.	Liquid ( )	c.	Highly compressible
D.	Gas ( )	d.	Any number of free surfaces
E.	Molecule ( )	e.	Rigid
		f.	Basic building block of the matter

2.



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Column A		Column B	
A.	Boiling ( )	a.	Gas to liquid
B.	Melting ( )	b.	Solid to gas
C.	Condensation ( )	c.	Liquid to solid
D.	Freezing ( )	d.	Liquid to gas
		e.	Solid to liquid

3.



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Very Short Answer Type Questions

1. Define cohesive and adhesive force.



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2. Define melting and boiling points.



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3. Name the factors which affect the rate of evaporation.



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4. Define atomicity.



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5. What is the difference between an element and a compound?

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6. Give two examples of metals which can exist in liquid state below  $35.^\circ C$ .

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7. What is a metalloid ? Give two examples.

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8. What type of metals are found in free state ?



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9. Distinguish sublimate from sublime.



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10. What is sublimation ?



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11. What is meant by intermolecular space and intermolecular forces of attraction ?



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12. Mention the factors on which the existence of matter in a particular state depends.

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13. Distinguish between melting and boiling.

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14. "All pure substances are homogenous in nature" Justify.

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15. How can the constituents of compounds and mixtures be separated respectively ?

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**16.** Give two examples for sublimable substances.

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**17.** Name any two metals which are poor conductors of electricity

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**18.** Mention the difference between filtrate and residue.

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19. Name two elements which have atomicity more than three .

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20. Name two states of matter which are fluid.

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## Short Answer Type Questions

1. Distinguish between evaporation and boiling.

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2. Classify the elements based on atomicity with examples.



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3. Distinguish between compounds and mixtures.



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4. Explain the suitable method of separation of ammonium chloride from common salt.



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5. Explain the process of sedimentation and decantation.



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6. What are homogeneous and heterogeneous mixtures ? Give one example for each.

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7. Explain classification of matter based on its molecular composition with suitable examples.

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8. Copy and complete the following table.

Only one free surface	
Solid	Spontaneous and rapid diffusion

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9. Explain the factors affecting the rate of evaporation.

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10. Discuss the characteristics of

(a) element

(b) mixture

(c) compound

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11. Distinguish between an atom and a molecule. Give example of elements existing as atoms and molecules.

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**12.** Distinguish between malleability and ductility with examples.

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**13.** What is intermolecular force of attraction ? Mention two types of intermolecular force of attraction acting between molecules.

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**14.** What is diffusion? Give one application.

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15. Give schematic representation of classification of matter based on its composition.

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16. Describe the process of separation of the components of a mixture of iron filings, sand and camphor.

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## Essay Type Questions

1. Compare solids, liquids and gases with respect to their physical properties.

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## 2. Physical properties of metals and non metals

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## 3. Explain the following methods of separation with suitable examples

(a) Distillation , (b) Filtration

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## 4. Explain different process of inter-conversions of states of matter.

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5. Describe the process of separation of constituents of gun powder.



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6. Give reasons for the following.

(a) Leaves of plants appear to wilt in summer afternoons.

(b) When perfume is sprayed on hand, we feel cool.

(c) Leaves of submerged aquatic plants contain wax coating.

(d) Perspiration is greater in coastal areas than in non coastal areas



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7. Explain sublimation with suitable example.

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8. Compare three different states of matter with respect to the arrangement of molecules and their related parameters.

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### Concept Application Level 1

1. Intermolecular space is maximum in gases.

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2. Metals are highly ductile but non-malleable.

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3. Evaporation is a surface phenomenon.

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4. A pure substance is homogeneous in nature.

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5. Tellurium shows the properties of both metals and non-metals.

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6. Iodine is a lustrous metal.





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7. Sodium floats on water.



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8. Ammonium chloride is a sublimable substance.



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9. The components of compound are separated by physical processes.



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10. Sublimation is the process of the conversion of a solid to its liquid state.

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### Concept Application Level 1 Fill In The Blanks

1. \_\_\_\_\_ is a surface phenomenon, whereas boiling is a \_\_\_\_\_

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2. \_\_\_\_\_ state of matter is incompressible.

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3. A pure substance is \_\_ in nature.

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4. \_\_ is a lustrous non-metal.

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5. Generally, the components of a compound are separated by

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6. \_\_\_ is the non-metal which is a good conductor of electricity.

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7. \_\_\_\_\_ in humidity increases rate of evaporation.

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8. A mixture of two solids is generally \_\_\_\_\_ while a mixture of any number of gases is \_\_\_\_\_

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9. Mixture of iron fillings and sand can be separated by \_\_\_\_\_

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10. \_\_\_\_\_ and \_\_\_\_\_ are the suitable separation methods for mixtures of soluble solids in liquids.



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### Concept Application Level 1 Select The Correct Alternative

1. Identify the wrong statement among the following:

- A. Molecules of solids possess only vibratory motion.
- B. Solids are incompressible.
- C. Solids have only one free surface.
- D. Gases are highly diffusible.

**Answer: C**

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2. The atomicity of which among the following is the maximum ?

A. Helium

B. Fluorine

C. Ozone

D. Sulphur

**Answer: D**

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	Column-A		Column-B
3.	(A) Sublimation	( )	(a) $NaCl$ + water
	(B) Filtration	( )	(b) Iodine+sand
	(C) Evaporation	( )	(c) Sawdust+water

A.  $A \rightarrow a$     $B \rightarrow c$     $C \rightarrow b$

B.  $A \rightarrow c$     $B \rightarrow a$     $C \rightarrow b$

C.  $A \rightarrow c$     $B \rightarrow b$     $C \rightarrow a$

D.  $A \rightarrow b$     $B \rightarrow c$     $C \rightarrow a$

**Answer: D**



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4. Which of the following is a true statement regarding mixtures?

- A. They have variable composition
- B. Mixtures are always homogeneous
- C. Mixtures are always heterogeneous.
- D. None of these

**Answer: A**

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5. A drop of water contains \_\_\_\_\_

- A. 2 atoms of hydrogen and one atom of oxygen
- B. 1 molecules of hydrogen and one atom of oxygen
- C. millions of molecules of water
- D. one molecule of hydrogen and one molecule of oxygen



**Answer: C**



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**6. Germanium is a \_\_\_\_\_**

A. gas

B. metal

C. liquid

D. metalloid

**Answer: D**



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7. The process of separation of components of muddy water is

- A. decantation
- B. sublimation
- C. magnetic separation
- D. None of these

**Answer: A**



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8. Lime water is a \_\_\_\_\_

- A. mixture
- B. element

C. compound

D. All the above

**Answer: A**



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9. Water sticks to glass due to \_\_\_\_\_

A. adhesive forces between water and glass.

B. cohesive forces between water and glass.

C. cohesive forces between water molecules.

D. cohesive forces between glass molecules.

**Answer: A**



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10. The temperature at which solid changes to liquid is called

-----

- A. melting point
- B. boiling point
- C. evaporation
- D. condensation

**Answer: A**



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11. A homogeneous mixture among the following is

- A. milk

B. muddy water

C. smoke

D. air

**Answer: D**



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**12.** The false statement among the following is

A. every pure substance is homogeneous in nature

B. in compounds the constituents do not retain properties

C. the constituents of a mixture can be separated by  
physical method

D. during formation of mixtures there is a change in the molecular composition

**Answer: D**



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**13.** Which among the following has strong forces of attraction ?

A. Hydrogen chloride

B. Bromine

C. Fluorine

D. Chlorine

**Answer: B**



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14. Gases form homogeneous mixture due to their

- A. diffusibility
- B. high compressibility
- C. expansibility
- D. low density

**Answer: A**



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15. Washing soda ( $Na_2CO_3$ ) is a compound because the constituents combine

- A. chemically in fixed ratio by weight
- B. chemically in any ratio by weight.
- C. physically in fixed ratio by weight.
- D. physically in any ratio by weight.

**Answer: A**



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**16.** Which among the following pairs of substances has strong intermolecular forces of attraction ?

- A. Bromine, mercury
- B. Gallium, bromine
- C. Bromine, sodium



D. Carbon, potassium

**Answer: D**

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17. Among the following which is a pair of soft metals ?

A. Sodium, potassium

B. Potassium, magnesium

C. Magnesium, calcium

D. Calcium, manganese

**Answer: A**

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18. Identify the odd one among the following with respect to tensile strength as well as ductility.

- A. Gas carbon
- B. Diamond
- C. Graphite
- D. Carbon fibre

**Answer: D**



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19. A mixture contains three components namely glucone-D, water and sand. These three can be collected separately by

- A. filtration and evaporation

B. filtration and sublimation.

C. filtration and distillation.

D. sedimentation and decantation.

**Answer: C**



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**20. Identify a false statement among the following.**

A. Evaporation is a surface phenomenon and causes cooling.

B. Rate of evaporation is directly proportional to temperature.

C. Rate of evaporation is inversely proportional to surface area of liquid.

D. Evaporation causes cooling and depends on humidity.

**Answer: C**



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**21.** Separation of sawdust from water, can be carried out by the following steps given below. Arrange them in a proper sequence.

(a) The mixture is poured gently in to the filter cone and collected into another beaker which is called filtrate.

(b) A mixture of saw dust and water is taken in a beaker

(c) A filter paper is folded in the form of a cone and fitted into

a funnel by moistening it with few drops of water

(d) solid retained on the filter paper is called residue.

A. cabd

B. abcd

C. cdba

D. bcad

**Answer: D**



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**Concept Application Level 1 Match The Column**

Column A		Column B	
A. Sodium	( )	a. Homogeneous mixture	
B. Sodium chloride	( )	b. Element	
C. Sulphur in water	( )	c. Compound	
D. Sugar in water	( )	d. Heterogeneous mixture	
	( )	e. Impure compound	

1. \_\_\_\_\_

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Column A		Column B	
A. Boiling	( )	a. Water changes to ice	
B. Melting	( )	b. Water vapour changes into water	
C. Condensation	( )	c. Ice changes into water	
D. Freezing	( )	d. Water changes into water vapour	
	( )	e. Ice changes into water vapour	

2. \_\_\_\_\_

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Column A		Column B	
A. Distillation	( )	a. Mixture of sodium chloride and ammonium chloride	
B. Filtration	( )	b. Mixture of sodium chloride and water	
C. Sublimation	( )	c. Mixture of sawdust and water	
D. Sedimentation	( )	d. Mixture of iron and sulphur	
E. Magnetic separation	( )	e. Mixture of sand and water	

3. \_\_\_\_\_

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## Level 2 Select The Correct Alternative

1. Water shows concave meniscus in a narrow glass tube. This is because.

- A. adhesive forces is stronger than cohesive force.
- B. adhesive force is weaker then cohesive forces.
- C. cohesive forces and adhesive are equal
- D. of absence of adhesive force.

**Answer: A**



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2. Iron powder and powder of rust are taken in two containers X and Y respectively. Dilute sulphuric acid is added to both the containers. Then

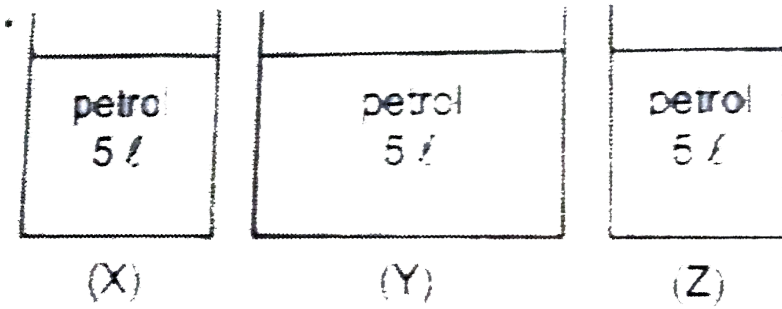
- A. effervescence is observed in two containers.
- B. effervescence is observed in case of X but not Y.
- C. effervescence is observed in case of Y but not X.
- D. no effervescence is observed in both cases.

**Answer: B**



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3. X, Y and Z

containers are placed at  $25^{\circ}C$ . Then decrease in temperature

is more in \_\_\_\_\_ .

- A. X
- B. Y
- C. Z
- D. Cannot be predicted.

**Answer: B**



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4. The inter conversion involved in usage of "odonil" in wash room is \_\_\_\_\_ .

A. sublimation

B. deposition

C. melting

D. freezing

**Answer: A**



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5. Dogs stretch out tongues generally in summer because

A. evaporation lead cooling.

B. of condensation of water vapour.

C. of freezing of saliva.

D. their body temperatures are high.

**Answer: A**



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6. A mixture contains three components namely glucone-D, water and sand. These three can be collected separately by

A. filtration and distillation

B. filtration, sedimentation and decantation.

C. sublimation and distillation.

D. sublimation, sedimentation and decantation.

**Answer: A**



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7. Thermal expansion of solids is the least among the three states of matter due to

- A. high kinetic energy of molecules of solids.
- B. close packing of molecules solids.
- C. the vibratory motion and rotatory motion of molecules of solids.
- D. the large intermolecular space present in solids.

**Answer: B**



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8. Water shows convex meniscus in narrow \_\_\_\_\_ and \_\_\_\_\_ tubes.

- A. glass, plastic
- B. glass, wax coated glass
- C. wax coated glass, plastic
- D. plastic, coloured glass

**Answer: C**



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9. Among the following a pair of a compound and an element respectively is

- A. iron powder, rust powder.

B. rust powder, iron powder.

C. lime, rust powder.

D. rust powder, lime.

**Answer: B**



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**10. Rate of evaporation of water**

A. is more in coastal area than in non coastal area.

B. is more in non coastal area than in coastal area.

C. is the same in both coastal and non coastal areas.

D. Cannot be predicted.

**Answer: B**



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11. Sublimation is involved in \_\_\_\_\_ .

- A. incense stick and odonil.
- B. camphor and incense stick
- C. perfume and odonil.
- D. naphthalene balls and camphor.

**Answer: D**



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12. Sodium catches fire easily and chlorine is a harmful gas. But sodium chloride is indispensable in our daily meal. Give

reasons.



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**13.** Sand and sawdust are mixed with water. Name the techniques that can separate sand and sawdust from water.



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**14.** Two test tubes X and Y are filled with water and mercury, respectively. After these two liquids were poured, water drops on the inner walls of X were observed but no mercury drops in Y were seen. Give reasons.



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15. Cotton clothes can be made more easily than synthetic clothes. Explain.

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16. The thermal expansion of solids is the least among the three states of matter. Explain.

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17. Camphor pellets should be preserved in air-tight containers. Give reasons.

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**18.** During summer vacation Ravi decided to go to his grandparent's place at Delhi. Since it was summer, therefore, Ravi's mother advised him to carry only cotton clothes. Why did she say so? Give reason.



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**19.** Why are droplets of water observed on the outer walls of a glass tumbler containing ice?



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**20.** When Rita opened the perfume bottle in the bed room without the permission of her mother, how did her mother come to know while watching TV in the drawing room?



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**21.** Jack was getting late for the school, so, his mother advised him to pour hot milk from a glass into a saucer and then drink.

Why did she say so? Give reason.



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**22.** Why do we observe fog and mist in winter mornings?



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**23.** When Vasu was running high temperature her mother was nursing him by placing wet cloth on his forehead till

temperature has gone down. Justify what purpose did the mother's action serve.

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**24.** A student has a mixture consisting of charcoal and sulphur powder. He adds a certain reagent where he observes that one of the component goes into the solution state. Name the techniques by which the components can be separated.

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**25.** Mother took her two daughters Bhavani and Shivani to swimming pool in summer vacation. They both enjoyed swimming hours together. When they came out of swimming pool, both were shivering and fighting for the towel. Explain

the reason for their shivering immediately after they came out of swimming pool.



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26. Establish logically that water is a compound.



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### Level 3

1. Earthen pitchers are more effective in Hyderabad than in Chennai. Justify.



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2. How is milk powder prepared from milk ?

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3. Why is mercury used in a thermometer ? Is it suitable for measuring high temperature ? Name the liquid which can be used for the measurement of high temperatures. Give reasons.

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4. Two thermometers A and B are dipped in water and alcohol respectively taken in two containers of similar dimensions at room temperature. Compare the temperatures shown by these two thermometers giving appropriate reasons.

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5. Naturally occurring diamonds are sometimes found in different colours. Give reasons.



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## Assessment Test 1

1. Identify true statement among the following.

- A. The constituents of both compound and mixture can be separated by physical methods only.
- B. The constituents of both compound and mixture can be separated by chemical methods only.

C. The constituents of compounds and mixture can be separated by chemical method and physical methods respectively.

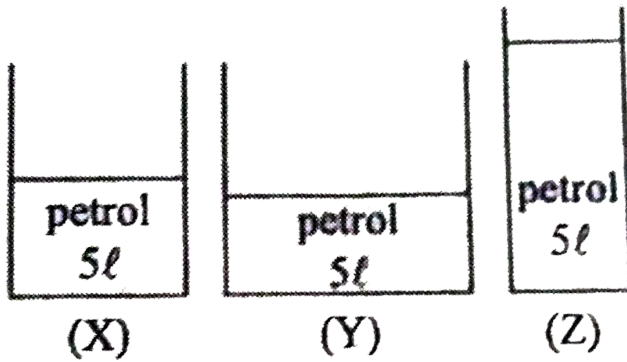
D. The constituents of compounds and mixture can be separated by physical methods and chemical methods respectively.

**Answer: C**



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2.

If X, Y and Z containers are placed at  $25^{\circ}\text{C}$ , then rate of evaporation is more in \_\_\_\_\_ .

A. X

B. Y

C. Z

D. Can't be predicted.

**Answer: C**



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3. The inter conversion involved in usage of "odonil" in wash room is \_\_\_\_\_ .

A. sublimation

B. deposition

C. melting

D. freezing

**Answer: A**



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4. Which among the following substances has the strongest intermolecular forces of attraction?

A. Steam

B. Bromine

C. Oxygen

D. Hydrogen chloride gas

**Answer: B**



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5. Thermal expansion of solids is the least among the three states of matter due to

A. high kinetic energy of molecules of solids.

B. close packing of molecules solids.

C. the vibratory motion and rotatory motion of molecules of solids.

D. the large intermolecular space present in solids.

**Answer: B**



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**6. Assertion (A) :** Dogs stretch out their tongues in summer.

**Reason (R ) :** Evaporation leads to cooling.

A. Both A and R are true and R is the correct explanation for

A.

B. Both A and R are true but R is not the correct explanation for A.

C. A is true and R false.

D. A is false and R is true.

**Answer: A**



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7. A form of which of the following non-metals is the hardest substance ?

A. Phosphorus

B. Sulphur

C. Iodine

D. Carbon

**Answer: D**



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8. Which among the following is a pure substance?

- A. Dilute sulphuric acid
- B. Concentrated sulphuric acid
- C. Aqueous NaCl
- D. Molten NaCl

**Answer: D**



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9. Arrange the following examples in the order of matter, compound, element and mixture. (1) dilute acid (2) argon (3) water (4) ball

- A. a,c,b,d

B. d,c,b,a

C. a,b,d,c

D. d,c,a,b

**Answer: B**



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**10. Which among the following is a heterogeneous mixture ?**

A. Soda water

B. Air

C. Milk

D. Sugar water

**Answer: C**



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11. For the separation of components of a mixture of camphor, filings and sand, arrange the following processes in sequence.

(a) Magnetic separation, (b) Distillation

(c) Sublimation, (d) Sedimentation and decantation

A. a,b,c,d

B. b,a

C. b,d

D. a,c

**Answer: D**



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12. Iron powder and powder of rust are taken in two containers X and Y respectively. Dilute sulphuric acid is added to two containers

- A. Effervescence is observed in both the containers.
- B. Effervescence is observed in X but not in Y.
- C. Effervescence is observed in Y but not in X.
- D. No effervescence is observed in any of the containers.

**Answer: B**



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13. Match the following.

Column A Principle	Column B Procedure
(A) Evaporation ( )	(a) Purification of drinking water which contains suspended matter
(B) Filtration ( )	(b) Earthen pots
(C) Sublimation ( )	(c) Odonil used in washroom

A.  $A \rightarrow a, B \rightarrow c, C \rightarrow b$

B.  $A \rightarrow c, B \rightarrow a, C \rightarrow b$

C.  $A \rightarrow c, B \rightarrow b, C \rightarrow a$

D.  $A \rightarrow b, B \rightarrow a, C \rightarrow c$

Answer: D



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14. Property responsible for spreading of fragrance of flower is \_\_\_\_\_ .

A. compressibility of gas/vapour

B. diffusion of gas/vapour

C. expansibility of gas/vapour

D. Both 3 and 2

**Answer: B**



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15. Assertion (A) : Baking soda ( $NaHCO_3$ ) is a compound.

Reason (R ) : Properties  $NaHCO_3$  are absolutely different from sodium, carbon, hydrogen and oxygen.

- A. Both A and R are true and R is the correct explanation for A.
- B. Both A and R are true but R is not the correct explanation for A.
- C. A is true and R false.
- D. A is false and R is true.

**Answer: A**



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## Assessment Test 2

1. Identify the true statement among the following.

- A. Both compounds and mixtures are homogeneous.
- B. Both compounds and mixtures are heterogeneous.
- C. Compounds are homogeneous and mixtures are heterogeneous.
- D. Compounds are homogeneous and mixtures can be homogeneous or heterogeneous.

**Answer: D**



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## 2. Rate of evaporation of water

- A. is more in coastal area than in non-coastal area.
- B. is more in non-coastal area than in coastal area.

C. is the same in both coastal and non-coastal areas.

D. Cannot be predicted.

**Answer: B**

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3. Sublimation is involved in \_\_\_\_\_ .

A. incense stick and odonil.

B. camphor and incense stick

C. perfume and odonil.

D. naphthalene balls and camphor.

**Answer: D**

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4. Which among the following pairs of substances has strong intermolecular forces of attraction ?

- A. Bromine, mercury
- B. Gallium, bromine
- C. Bromine, sodium
- D. Carbon, potassium

**Answer: D**



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5. Identify the true statement among the following:

- A. Gases are highly compressible and diffuse very easily.

B. Gases possess strong intermolecular forces of attraction.

C. Solids are highly compressible.

D. Solid molecules are loosely packed.

**Answer: A**



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**6. Assertion (A) :** Rate of evaporation is less in rainy season.

**Reason ( R)** Rate of evaporation is directly proportional to humidity.

A. Both A and R are true and R is the correct explanation for

A.



B. Both A and R are true but R is not the correct explanation for A.

C. A is true and R false.

D. A is false and R is true.

**Answer: C**



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7. Identify the odd one among the following with respect to tensile strength as well as ductility.

A. Gas carbon

B. Diamond

C. Graphite

D. Carbon fibre

**Answer: D**

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8. Identify the false statement among the following.

A. Compound is homogeneous in nature.

B. In compounds constituents do not retain properties

C. The constituents of mixture can be separated by physical method.

D. during formation of mixtures there is a change in the molecular composition

**Answer: D**



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9. Arrange the following substance in the ascending order of the number of constituent element(s) present in them.

(a) Sodium bicarbonate, (b) Calcium carbonate

(c) Water, (d) Copper

A. d,c,b,a

B. c,b,a,d

C. b,a,d,c

D. a,b,c,d

**Answer: A**



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10. A homogeneous mixture among the following is

A. milk

B. muddy water

C. smoke

D. air

**Answer: D**



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11. For the separation of the components of a mixture of iodine, iron filings and sawdust arrange processes in sequential order.

(a) The mixture is covered with an inverted funnel. The outside surface of the funnel is wrapped with a moist filter paper and

the mixture is gently heated. Iodine is separated.

(b) A strong bar magnet is moved through the mixture. The iron filings are separated.

(c) Sawdust is left after iodine separates.

The mixture is exposed to wind to remove sawdust.

A. b,a,c

B. d,b,a

C. d,c,a

D. a,d,c

**Answer: A**



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12. Among the following, a pair of compound and an element respectively is

A. iron powder, rust powder.

B. rust powder, iron powder.

C. lime, rust powder.

D. rust powder, lime.

**Answer: B**



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### 13. Match the following.

Column A		Column B
(A) Sublimation	( )	(a) Copper sulphate and water
(B) Filtration	( )	(b) Sawdust and water
(C) Evaporation	( )	(c) Iodine and sand
(D) Magnetic separation	( )	(d) Common salt from sea water
(E) Distillation	( )	(e) Iron and sulphur

A.  $A \rightarrow c, B \rightarrow b, C \rightarrow d, D \rightarrow e, E \rightarrow a$

B.  $A \rightarrow c, B \rightarrow d, C \rightarrow b, D \rightarrow e, E \rightarrow a$

C.  $A \rightarrow d, B \rightarrow e, C \rightarrow c, D \rightarrow a, E \rightarrow b$

D.  $A \rightarrow b, B \rightarrow a, C \rightarrow d, D \rightarrow e, E \rightarrow c$

**Answer: A**



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### 14. Gases form homogeneous mixture due to their

A. diffusibility.

B. high compressibility.

C. expansibility.

D. low density.

**Answer: A**



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**15. Assertion (A) :** Washing soda ( $Na_2CO_3$ ) is a compounds.

**Reason (R) :** Sodium retains its property in washing soda.

A. Both A and R are true and R is the correct explanation for

A.



B. Both A and R are true but R is not the correct explanation for A.

C. A is true and R false.

D. A is false and R is true.

**Answer: C**



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