



SHIKSHA CLASSES

Sub. : Science
Std. : VIIIth - S.B.

Answer Paper
6. Composition of Matter

Marks : 20

Q.1(A) : Choose the correct alternative

2

1) The intermolecular force is _____ in the particles of solid.

Ans : c) maximum

2) Milk is an example of type of matter called _____.

Ans : c) heterogeneous mixture

Q.1(B) : Solve any one of the following question

1

1) Define Elasticity.

Ans : Solids retain their volume even when external pressure is applied. This property is called elasticity.

2) Identify the odd term out

Gold, silver, copper, brass.

Ans : Brass.

3) Write the names and symbols of the constituent elements and identify their valencies from the molecular formulae given below. BaCl_2

Ans : Name of BaCl_2 - Barium chloride

Constituent elements - Ba, Cl

Valency - B = 2, Cl = 1

Q.2(A) : Give reason (Any One)

2

1) Hydrogen is combustible, oxygen helps combustion, but water helps to extinguish fire.

Ans : 1) Water is a compound of hydrogen and oxygen.

2) In a compound, the constituents do not retain their individual properties. Hence, hydrogen is combustible and oxygen helps combustion, but water is neither combustible nor supports combustion, it helps to extinguish fire.

2) Lemon sharbat has sweet, sour and salty taste and it can be poured in a glass.

Ans : 1) Lemon sharbat is a mixture. It is made up of lemon juice, sugar, salt and water.

2) Formation of lemon sharbat does not involve any chemical reaction.

3) The constituents of sharbat retain their individual properties. Hence, lemon sharbat is sweet, sour and salty to taste and it can be poured in a glass.

Q.2(B): Solve any two of the following question.

4

- 1) In one sample of brass, the following ingredients were found: copper (70%) and zinc (30%). Identify the solvent, solute and solution from these.

Ans : Brass is an alloy, it contains 70% copper and 30% zinc. The largest proportion is solvent, i.e. copper. The smaller proportion is solute, i.e. zinc. The solution is Brass.

- 2) Chemical composition of some matter is given in the following table. Identify the main type of matter from their composition.

Ans :

Name of matter	Chemical composition	Main type of matter
i) Hydrogen gas filled in a balloon	H ₂	element(molecule)
ii) Baking soda	NaHCO ₃	mixture

- 3) Write the difference between element and compound.

Ans :

Element	Compound
1. An element is made up of same kind of atoms.	1. A compound is obtained from different kinds of atoms.
2. An element cannot be split by physical or chemical methods.	2. A compound can be split into new substances by chemical methods.

- 4) Give two examples each.

a) Liquid element. b) Colloid

Ans : a) Liquid element - Mercury (Hg), Bromine (Br₂)

b) Colloid - mayonnaise, milk, butter, gelatin, jelly, muddy water

Q.3 : Solve any two of the following question.

6

- 1) Plants synthesize glucose in sunlight with the help of chlorophyll from carbon dioxide and water and give away oxygen. Identify the four compounds in this process and name their types.

Ans : **Photosynthesis:** $6\text{CO}_2 + 6\text{H}_2\text{O} \xrightarrow{\text{light}} \text{C}_6\text{H}_{12}\text{O}_6 + 6\text{O}_2$
Carbon dioxide Water Chlorophyll Glucose Oxygen
oxide

Carbon dioxide, water, glucose, and Chlorophyll are compounds.

Types: Organic compounds: Glucose

Inorganic compounds: Carbon dioxide and water

Complex compounds: Chlorophyll.

- 2) Define :

Ans : a) **Solution:** A homogeneous mixture of two or more substances is called as solution.

b) **Suspension:** A heterogeneous mixture of a liquid and a solid is called a suspension.

c) **Inorganic compound:** Compounds which when heated strongly decomposes to give a residue behind are called inorganic compound.

3) State the characteristics of a colloid.

Ans : **Characteristics of a colloid :**

- 1) In a colloid, the particles are spread uniformly throughout the solution.
- 2) The size of the particles is less than that of the particles in a suspension.
- 3) The particles are not visible to the naked eye.
- 4) The particles scatter a beam of light.
- 5) A colloidal solution appears to be homogeneous, but actually it is heterogeneous.

4) Seawater tastes salty due to the dissolved salt. The salinity (the proportion of salts in water) of some water bodies Lonar lake – 7.9%, Pacific Ocean 3.5%, Mediterranean sea – 3.8%, Dead sea – 33.7%. Explain three characteristics of mixtures from the above information.

Ans : 1) The constituents of a mixture (the proportion of salts in water) do not combine chemically.
2) Their constituents are present in any proportion by weight.
3) The constituent of a mixture can be separated by a physical process.

Q.4 : Solve any One of the following question.

5

1) **Explain :**

a) Water is a compound

Ans : i) The chemical reaction between the elements, hydrogen and oxygen molecules forms water.
ii) Water cannot be separated into its constituent elements by physical methods like magnetic separation, winnowing, etc.
iii) The property of water is completely different from its constituent elements hydrogen and oxygen. Hence, water is a compound.

b) Milk is a mixture

Ans : Mixture consist of two or more substances which are present together but are not combined chemically. Therefore, milk is a mixture as it consists of water, lactose, fats, protein and a few more natural substances which are there present together but they are not chemically combined.

2) Deduce the molecular formulae of the compound obtained from the following pairs of elements by the cross multiplication method.

- a) N (Valency 3) and H (valency 1) b) Ca (Valency 2) and O (valency 2)
c) Fe (Valency 2) and S (valency 2) d) C (Valency 4) and H (valency 1)
e) H (Valency 1) and O (valency 2)

Ans : a) N (Valency 3) and H (valency 1)

Step 1 : Write the symbols of the radicals. N H

Step 2 : Write the valency below the respective radical.

N	H
3	1

Step 3 : Cross-multiply symbols of radicals with their respective valency.

Step 4 : Write down the chemical formula of the compound. ----- NH_3

b) Ca (Valency 2) and O (valency 2)

Step 1 : Write the symbols of the radicals. Ca O

Step 2 : Write the valency below the respective radical.

Ca	O
2	2

Step 3 : Cross-multiply symbols of radicals with their respective valency.

Step 4 : Write down the chemical formula of the compound.----- CaO

c) Fe (Valency 2) and S (valency 2)

Step 1 : Write the symbols of the radicals. Fe S

Step 2 : Write the valency below the respective radical.

Fe	S
2	2

Step 3 : Cross-multiply symbols of radicals with their respective valency.

Step 4 : Write down the chemical formula of the compound.----- FeS

d) C (Valency 4) and H (valency 1)

Step 1 : Write the symbols of the radicals. C H

Step 2 : Write the valency below the respective radical.

C	H
4	1

Step 3 : Cross-multiply symbols of radicals with their respective valency.

Step 4 : Write down the chemical formula of the compound.----- CH_4

e) H (Valency 1) and O (valency 2)

Step 1 : Write the symbols of the radicals. H O

Step 2 : Write the valency below the respective radical.

H	O
1	2

Step 3 : Cross-multiply symbols of radicals with their respective valency.

Step 4 : Write down the chemical formula of the compound.----- H_2O

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