Elements, Compounds, symbols and formulae

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Homework Questions

1- How is sodium chloride different from its constituent, elements, sodium and chlorine in its properties?

Ans- The properties of sodium chloride are completely different from those of sodium and chlorine.
Sodium is a soft, highly reactive metal.
Chlorine is a poisonous non-metalic gas while sodium chloride is a very useful non poisonous compound which is added to our food to get minerals and also to add taste to it.

2- Name elements which form water. State three characteristics of water to justify that it is a compound.

Ans Water is made up of two elements known as hydrogen and oxygen.
The three characteristics of water to justify it is a compound are:

→ (i) Elements in a compound are always present in a definite proportion; 2 atoms of hydrogen

combined with 1 atom of oxygen to give 1 molecule of water → $H_2 + O = H_2O$ (Water). So, it is a compound.

→ (ii) Compounds have a definite set of properties. The properties of the compound water are different from the properties of the elements, hydrogen and oxygen in water.

→ (iii) Its constituents cannot be separated by simple physical means but requires chemical methods and it also has a fixed boiling and freezing point.

Q3- What do you mean by electrolysis?

Ans Electrolysis is a process by which electric current is passed through a substance to effect a chemical change. The process is carried out in an electrolytic cell, an apparatus consisting of positive and negative electrodes held apart and dipped into a solution containing positively and negatively charged ions.

4- Mention 3 gaseous elements and write their molecular formulae.

Ans.

Gaseous elements	Molecular formulae
Hydrogen	H_2
Oxygen	O_2
Chlorine	Cl_2

5- Metals are ductile and malleable. What do you understand by this statement?

Ans a) Metals are malleable i.e. they can be beaten into thin sheets with a harmer. Ex - Alluminium, Copper, etc.

b) Metal is ductile i.e. it can be drawn into thin wires. Ex - copper, gold, etc.

c) Two metals that are both malleable and ductile are aluminium and copper.

c) Malleability property of an iron metal is utilized in producing iron sheets required for making buckets.

d) Dictility property of copper metal is utilized in making thin wires.