

13/7/23

Elements Compounds and Mixtures

Q1 -> Define: ① pure substance

② mixture

③ element

④ compound

⑤ atomicity

Q2 -> Classify the following into metals, nonmetals, ~~metals~~ transition metals, metalloids and noble gases.

Magnesium, Silver, Tellurium, Helium, Neon

Answers

Q1 ① Pure substance - Pure substance have a definite chemical composition and definite physical and chemical properties. They are all homogeneous.

② Mixture - Mixture are made up of two or more pure substances mixed together in any proportion. They do not have a definite set of properties. They retain the properties of their components from which they are formed.

③ Element - An element is a pure substance which cannot be converted into anything simpler than itself by any physical or chemical process.

④ Compound - A compound is a pure substance composed of two or more elements, combined chemically in a definite proportion by mass.

⑤ Atomicity - The number of atoms present in a molecule of an element is called its atomicity.

Q2.	metals	non-metal	metalloids	Inert gases
	Magnesium Silver		tellurium	Helium Neon

-> Endothermic reaction (heat is absorbed)
Eg - $N_2 + O_2 + \text{heat} \xrightarrow{3000^\circ\text{C}} 2NO$

-> Exothermic reaction (heat is released)
Eg - $C + O_2 \rightarrow CO_2 + \text{heat}$

Exercise - I

Q1. Write the chemical name of the following and also give their molecular formula

Common Name	Chemical Name	Molecular Formula
a. Baking soda	Sodium bicarbonate	$NaHCO_3$
b. Vinegar	Acetic acid	CH_3COOH
c. Marble	Calcium carbonate	$CaCO_3$
d. Sand	Silica	SiO_2

Q2. Why is iron sulphide a compound?
ans. Iron (II) sulphide is a compound formed when iron and sulphur combine chemically on heating, in 7:4 ratio by mass. Iron sulphide is a black solid, while iron is a grey black metal and sulphur is a yellow amorphous non-metallic solid.

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Q1.
Q2.
Iron is a magnetic material and sulphur is soluble in carbon disulphide. Iron sulphide is neither attracted by a magnet nor it is soluble in carbon disulphide.

Q3. How does sodium chloride differ from its constituent elements? Explain.

Sodium is a

ans. Sodium chloride is a compound made up of sodium and chlorine when they combine chemically in a fixed ratio by mass. The sodium is a soft and highly reactive metal. Chlorine is a poisonous greenish yellow gas with a choking smell. But sodium chloride is a white crystalline solid which is not non-poisonous and useful.

(ii)

Q2.

Q2.

Q1.0