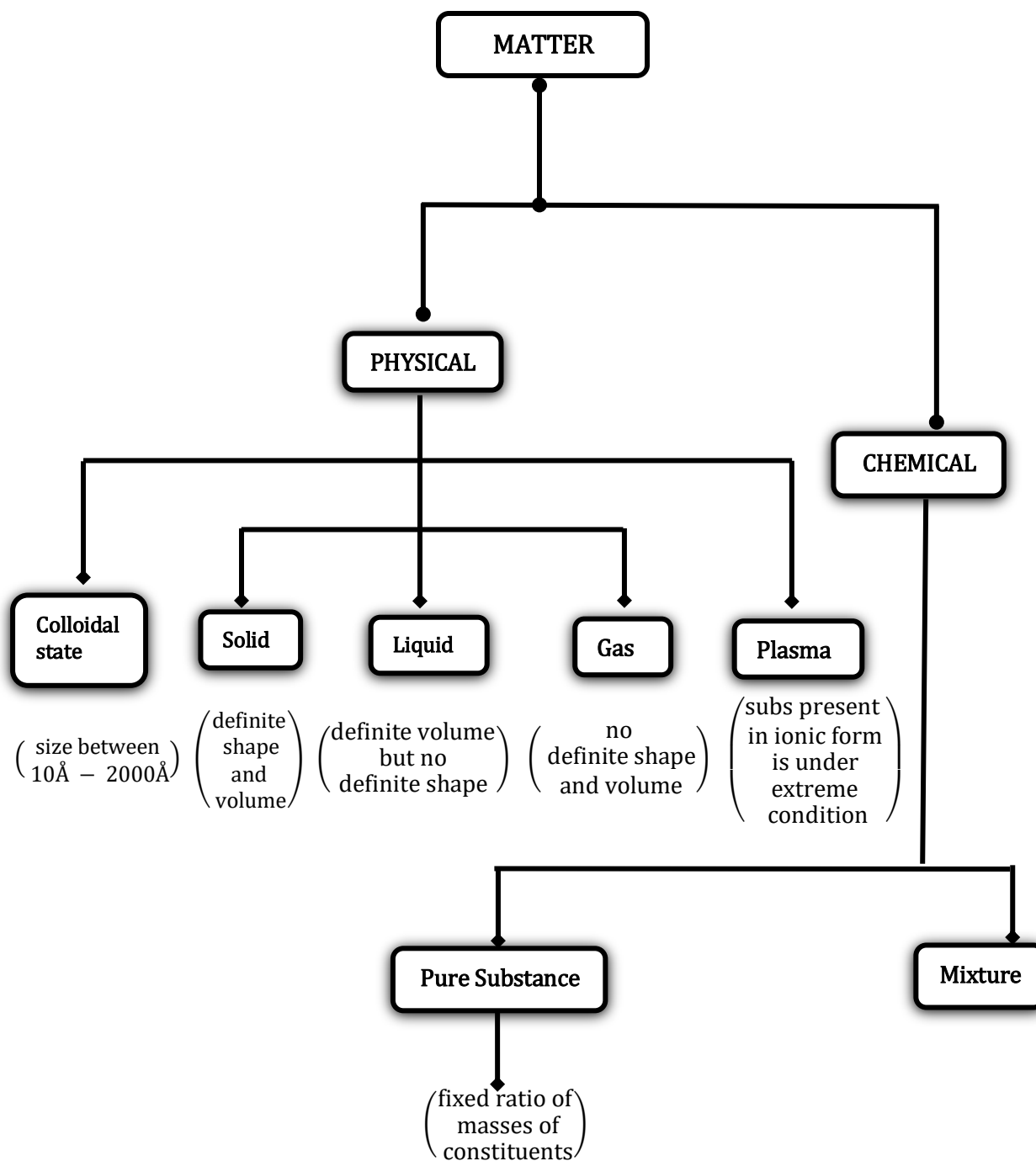
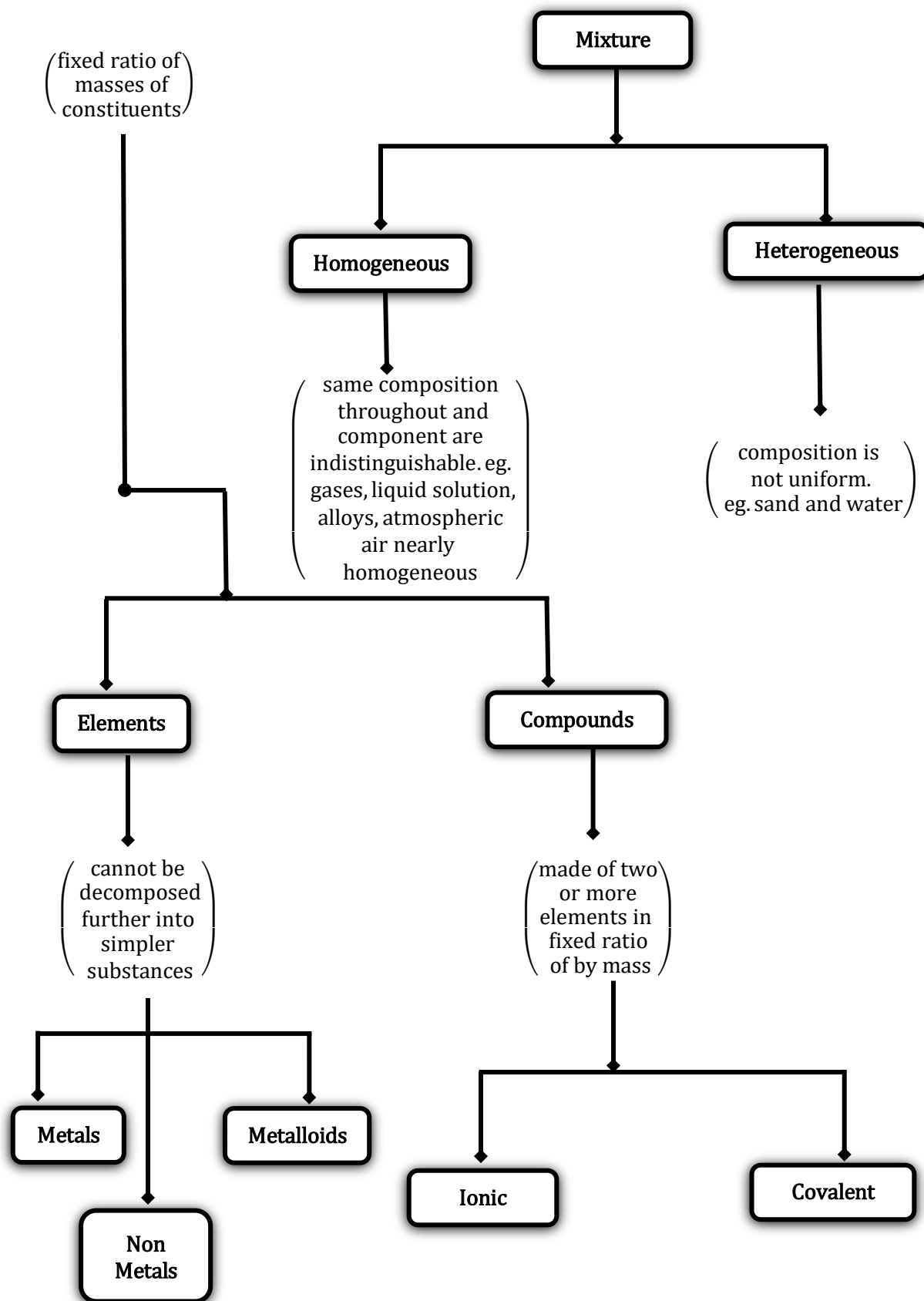


SOME BASIC CONCEPTS OF CHEMISTRY**NATURE OF MATTER****MOLE CONCEPT**



CLASSIFICATION OF UNIVERSE

(1) Matter

(2) Energy

(1) **MATTER**

The thing which occupies space and having mass which is feel by our five senses is called as matter.

2 Types

(I) Physical classification

(II) Chemical classification

(I) **Physical Classification**

It is based on physical state under ordinary conditions of temperature and pressure, matter is classified into the following three types:

(a) Solid

(b) Liquid

(c) Gas

(a) **Solid**

A substance is said to be solid if it possesses a definite volume and a definite shape

Ex. sugar, iron, gold, wood etc.

(b) **Liquid**

A substance is said to be liquid if it possesses a definite volume but not definite shape. They take up the shape of the vessel in which they are put.

Ex. water, milk, oil, mercury, alcohol etc.

(c) **Gas**

A substance is said to be gas if it neither possesses a definite volume nor a definite shape.

This is because they fill up the whole vessel in which they are put.

Ex. hydrogen(H_2), oxygen(O_2), carbon dioxide (CO_2), etc.'

(II) **Chemical Classification**

2 Types

(A) Pure Substance

(B) Mixture

(A) Pure Substance

A material containing only one type of substance. Pure Substance cannot be separated into simpler substance by physical method.

Ex. Element = Na, Mg, Ca etc.
 Compound = HCl, H₂O, CO₂, HNO₃ etc.

2 Types

- (a) Element
- (b) Compound

(a) Element: The pure substance containing only one kind of atoms.

3 Types (depend on physical and chemical property)

- (a) Metal
- (b) Non-metal
- (c) Metalloids

(b) Compound

It is defined as pure substance containing more than one kind of atoms which are combined together in a fixed ratio by weight and which can be decomposed into simpler substance by the suitable chemical method. The properties of a compound are different from those of its components.

Ex. H₂O , HCl, HNO₃ etc.

2 : 16

1 : 8 by wt.

2 Types

- (a) Organic Compound
- (b) Inorganic Compound

(B) Mixture

A material which contains more than one type of substances and which is mixed any ratio by wt. is called as mixture.

- The property of the mixture is the property of its components
- The mixture is separated by simple physical method.

2 Types

- (a) Homogeneous mixture
- (b) Hetrogeneous mixture

(a) Homogeneous Mixture

The mixture, in which all the components are present in uniform is called as homogeneous mixture.

Ex. Water + Salt, Water + Sugar, Water + alcohol,

(b) Hetrogeneous Mixture

The mixture in which all the components are present in nonuniform is called as Hetrogeneous mixture.

Ex. Water + Sand, Water + Oil,