

BASIC CONCEPTS 1

Basic Concepts and diffusion:

Atom: An atom is the smallest unchanged particles of element that can take part in a chemical reaction. All matter is composed of invisible atoms.

Atomic symbol: An atomic symbol is a one or two letter notation used to represent an atom corresponding to a particular element.

Molecule: A molecule is a definite group of atoms that are chemically bonded together that is, they are highly connected by attractive forces.

States of matter or phases:

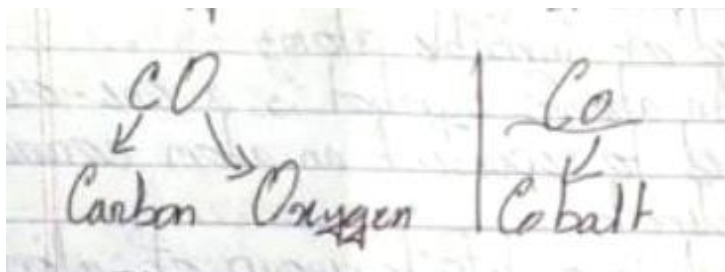
,=> solid, liquid and gas.

=>All are made up of particles.

Atoms:

Atom is the smallest particle that a matter is made up of so small that we need a microscope to see them, and also it is the smallest particles that makes part in a chemical reaction.

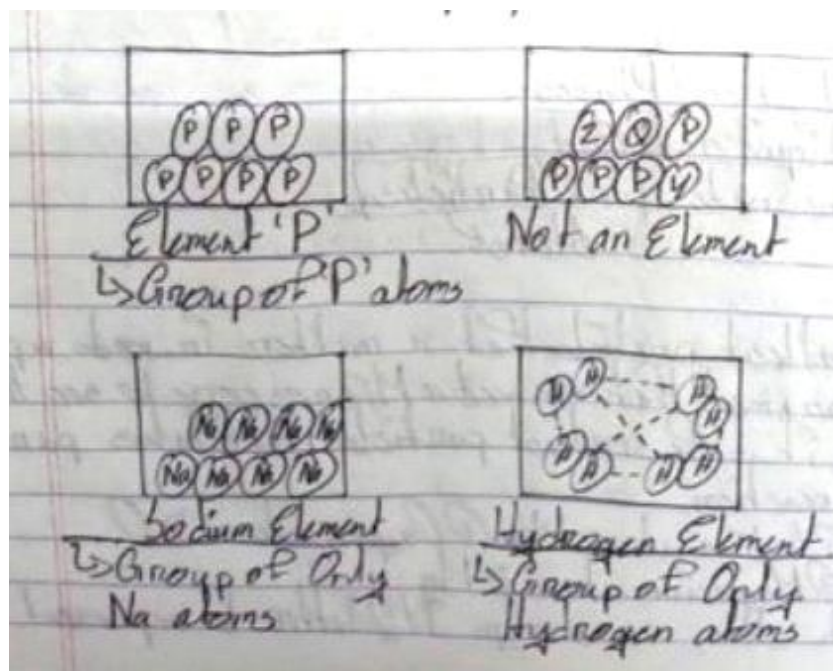
Examples sodium atom, oxygen atom, and magnesium atom. For each atom, we assign 1 or 2 letter to represent them as **atomic symbol**, (1 or 2 letters). The first letter is always in capitalized and the rest, if any, is in small letter.



Element:

It is a group of atoms, it may be same or identical.

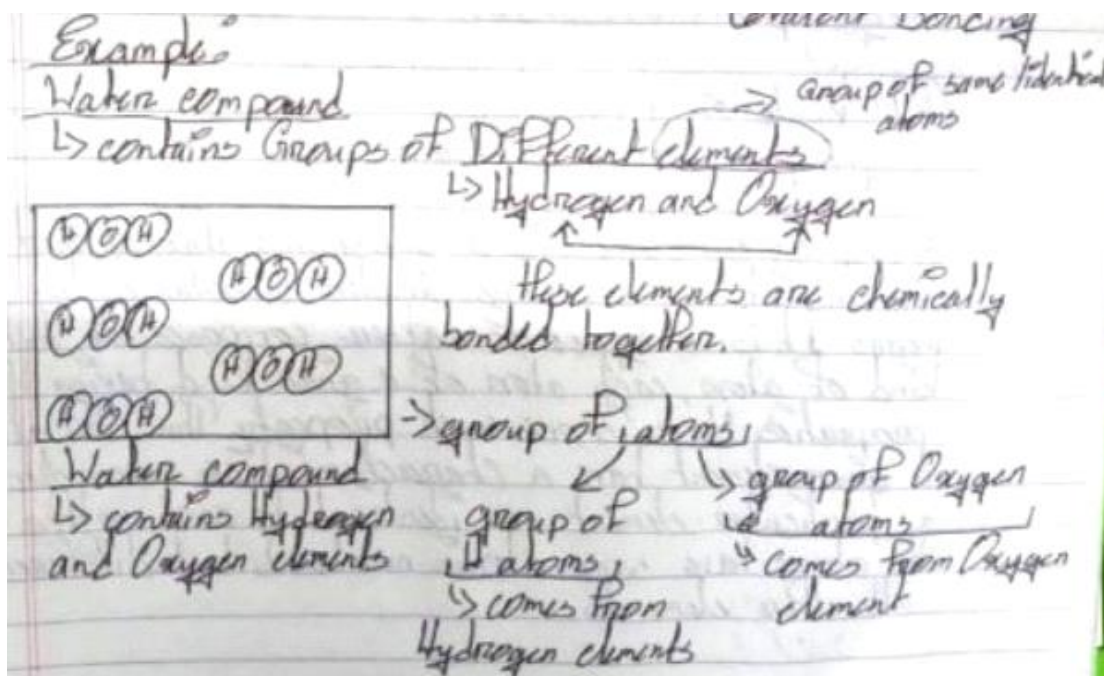
=> Properties like mass, size, or atomic particles.



Compound:

It is a group of element, (different).

Compound Y: it contains group of different elements which are chemically bonded, or combined together, Such as ionic bonding, covalent bonding..



Molecule:

It is a group of atoms which can be identical and also be different, there are two types.

1. **molecules** of an element, here group of atoms are same
2. **molecules** of compound, here group of atoms are different.

Element:

An element is a substance that cannot be broken into, or more simpler substances by chemical means. It is a type of matter compound of only are kind of atom, each atom of a given kind having its same properties. Mass is one such property. Thus the atoms of a given element have characteristics, mass, atoms of the particular element are identical to each other (is that all the atoms have same atomic number), but different for all other elements.

Compounds:

A compound is a type of matter or chemical containing two or more elements, chemically combined together. In other words, compounds are pure substance which contain only one type of molecule. The relative number of any two kinds of atoms in a compound occur in simple ratios. Water, for example, a compound of elements hydrogen and oxygen, consist of hydrogen and oxygen atoms in the ratio of 2:1, in a chemical reaction. Compound are denoted using chemical formulas. For example, H₂O, CO₂, NH₃.