

Chapter 3

ATOMS AND MOLECULES

Molecules:

A molecule is a group of two or more atoms that are chemically bonded together.

- A molecule is defined as smallest particle of an element or a compound that is capable of an independent existence and shows all the properties of that substance.

Molecules are of two types.

a) Molecules of elements.

b) Molecules of compounds.

- Molecules of elements are formed by combination of same type of atoms.

Ex. Oxygen molecule (O_2) formed by two atoms of same atoms.

- Molecules of compounds are formed by combination of atoms of different elements.

Ex.

1. One atom of nitrogen and three atoms of hydrogen combine to form NH_3 – ammonia.
2. One atom of carbon and two atoms of oxygen combine to form carbon dioxide – CO_2 .

Ions:

The charged species are known as ions.

An ion may consist of single charged atom or a group of atoms that have net charge on them.

- Ions can be $-ve$ or $+ve$ ly charged.

- A negatively charged ion is called an “anion” and positively charged ion is called a “cation”.

Ex.



Cl^- is anion.

- A group of atoms carrying a charge is known as a polyatomic ion.

Ex.

