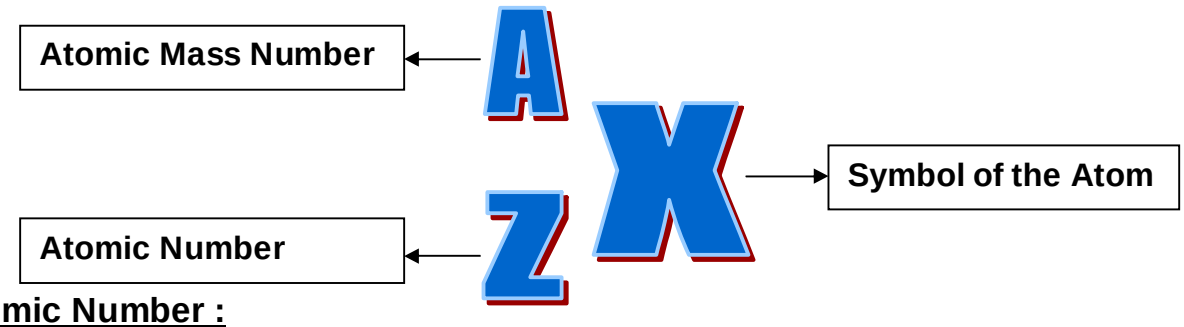
REPRESENTATION OF AN ATOM

Atoms and their Isotopes are represented by the following method.



Atomic Number :

The number of Protons present in the nucleus of an atom is called its atomic number. (Or)

The number of electrons present in the neutral atom is called as its atomic number.

It is denoted with "Z". **Z = n(p)**

For a neutral atom the number of electrons is equal to the number of protons.

If the number of protons is equal to the number of electrons (n(p) = n(e)), it represents an atom

If the number of protons is not equal to the number of electrons (n(p) ≠ n(e)), it represents an ion.

If the n(p) < n(e) , it represents a negative ion (anion).

If the n(p) > n(e) , it represents a positive ion (Cation).

Atomic Mass Number :

The number of nucleons present in the atom is called its Atomic Mass Number. (Or)

The total number of protons and neutrons in an atom is called its Atomic Mass Number.

It is denoted with "A". **A = Z + N**

Atomic Mass Number = Number of Nucleons

A = Number of Protons + Number of neutrons

A = n(p) + $n(n_0)$

A = Z + N

Atomic Mass Number is the nearest numerical integer to the atomic mass of an individual atom.

Number of Neutrons **N = A – Z**

Examples :

Atom	Number of Electrons	Number of Protons (Z)	Atomic Mass Number (A)	Number of neutrons N= A-Z
$_{9}F^{19}$	9	9	19	19 – 9 = 10
$_{11}Na^{23}$	11	11	23	23 – 11 = 12
$_{26}Fe^{56}$	26	26	56	56 – 26 = 30

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