

Chapter 4

STRUCTURE OF ATOM

Atom: Smallest particle of matter (or) building block of matter.

- The first ever atomic theory proposed is “Dalton’s atomic theory”, which says atom is indivisible.
- Experiments like, electrolysis conductance in gas proved that atom can be further divided.

Subatomic particles:

There are mainly three subatomic particles namely electron, proton and neutron.

- Electron is discovered by J.J. Thomson.
- It is lightest subatomic particle.
- It has unit negative charge whose value is $-1.6 \times 10^{-19}\text{C}$.
- Proton is discovered by Rutherford.
- Mass of proton is around 2000 times higher than electron.
- It has unit positive charge whose value is $+1.6 \times 10^{-19}\text{C}$.
- Neutron is discovered by James Chadwick.
- Mass of neutron is little higher than mass of proton.
- It is neutral hence, charge on neutrons is zero.

Summery:

Particle	Charge	Mass
Electron	$-1.6 \times 10^{-19}\text{C}$	$9.1 \times 10^{-31}\text{ Kg}$
Proton	$+1.6 \times 10^{-19}\text{C}$	$1.672 \times 10^{-28}\text{ Kg}$
Neutron	0	$1.675 \times 10^{-28}\text{ K}$