

Sub-Atomic Particles

Atom consists of three subatomic particles electron, proton, and neutron. Proton and Neutron are present in the centre of the atom called nucleus.

Electron:

- Electron was discovered by JJ Thomson through cathode ray experiment
- The charge of electron was determined by Robert Mullikan by 'oil drop experiment' and its value is $-1.602 \times 10^{-19} \text{ C}$.
- The mass of electron is or 0.000548 a.m.u., which is nearly equal to $1/1837$ the mass of one atom of hydrogen.

Proton:

- Proton was discovered by Goldstein through perforated cathode rays experiment which showed the presence of anode or canal rays.
- Proton carries a unit positive charge i.e. $1.602 \times 10^{-19} \text{ coulombs}$.
- Mass of the proton is $1.672 \times 10^{-24} \text{ g}$, which 1837 times heavier than an electron

Neutron:

- Neutron was discovered by Chadwick
- It has no charge.
- Mass of Neutron is $1.675 \times 10^{-24} \text{ g}$

