

THE BOHR MODEL OF THE ATOM

NUCLEUS

- PROTON: mass = 1.6726×10^{-27} kg
size = 8.77×10^{-16} m *
charge = +1
- NEUTRON: mass = 1.6749×10^{-27} kg
size = 8.77×10^{-16} m *
charge = 0
- Held together by the Strong Nuclear Force.
- Transformations possible by Weak Nuclear Force:
 $n \rightarrow p^+ + e^- + \text{energy}$

ELECTRON CLOUD

- ELECTRON: mass = 9.1094×10^{-31} kg
size = 2.82×10^{-15} m * particle
= 10^{-10} m * cloud
charge = -1
- Atom held together by the Electric & Magnetic Force

DEFINITIONS:

- *Atomic Number*: gives the Identity of the Element
= number of Protons in the Nucleus
= number of Electrons in a neutral atom
- *Atomic Mass* : = combined mass of Protons + Neutrons
- *Isotopes* : elements with same atomic number,
but with differing atomic masses
not all Isotopes are stable,
resulting in radioactivity