

Chapter 02

STRUCTURE OF ATOM

Particle nature of EM radiation:

Plank's Quantum theory:-

According to Max Plank, atoms or molecules could emit or absorb energy only in discrete quantities.

- The smallest quantity of energy emitted or absorbed is called as "Quantum".
- The energy of quantum (E) is directly proportional to its frequency (ν)

$$\Rightarrow E \propto \nu$$

$$\Rightarrow E = h\nu$$

Where 'h' is plank's constant.

Its value is given as

$$h = 6.626 \times 10^{-34} \text{ J.S}$$

(or)

$$h = 6.626 \times 10^{-27} \text{ erg-s}$$

- Plank's theory suggest particle nature of electromagnetic radiation.
- It could explain certain properties like,
 - a) Black Body radiation
 - b) Photo electric effect
 - c) Atomic spectra