

# Electromagnetic Radiation



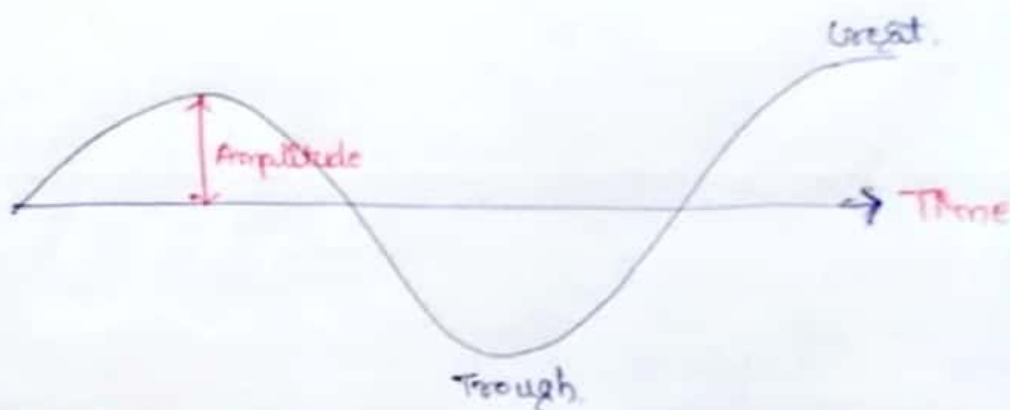
\* Form of energy that is produced by oscillating electric & magnetic field.

\* Some important terminologies:-

\* Wavelength ( $\lambda$ )  $\Rightarrow$  Difference between crest & trough.

\* Denoted by  $\lambda$  (Lambda)

\* Expressed in  $\text{\AA}$ , mm,  $\mu\text{m}$  etc



\* wavelength gives the information about type of light.

\* Amplitude tells about the intensity of the light.

\* Frequency :- \* Number of cycles per second.

\* Denoted by  $\nu$  (nu)

\* Expressed as  $\text{Sec}^{-1}$  / Hertz (Hz).

\* Relation b/w velocity of light, wavelength & frequency:-

$$c = \lambda \nu$$

$c \Rightarrow$  velocity of light

$\lambda \Rightarrow$  wavelength

$\nu \Rightarrow$  Frequency.

\* Relation between energy & frequency :-

$$E = h\nu$$

E = Energy

h = Planck's constant  $\Rightarrow 6.62 \times 10^{-34} \text{ J}$

$\nu$  = Frequency.

\* wave number :-

\* Number of waves passed through space of 1 cm.

\* Denoted by  $\bar{\nu}$  (nu bar)

\* Expressed as  $\text{cm}^{-1}$ .

$$\bar{\nu} = \frac{1}{\lambda}$$

$$\bar{\nu} = c\nu$$

$$\bar{\nu} = c \times \frac{1}{\lambda}$$

