

5-25-16
Com 141

Electromagnetic Radiation (EMR)

ex: UV, microwaves, visible lt, X rays
characterized λ, ν

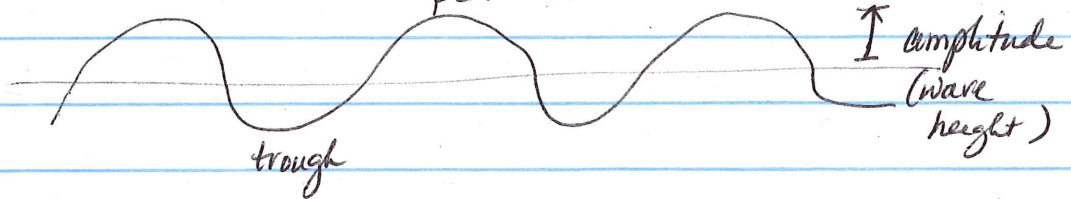
Q: Is EMR:

Wave
particle
both
neither ??

[ans: both]

I lt as a wave

A. λ = Wavelength = distance between sim. pts (ex: crest-crest, trough-trough)



1. "parts" trough, crest, amplitude
2. λ = distance (expect dist. units!)

B. ν = frequency = $\frac{\text{how often a pt on a wave passes}}{\text{time unit}}$

1. ex:

2 waves pass pt in one sec

$$\nu = \frac{2}{\text{sec}} \text{ or } 2 \text{ waves} \cdot \frac{1}{\text{sec}} \quad [= 2 \text{ s}^{-1}]$$

2. units = $\frac{\text{cycles}}{\text{time}}$ Hertz (Hz) = $\frac{1 \text{ cycle}}{\text{sec}}$

in ex above $2 \text{ s}^{-1} = 2 \text{ Hz}$

3. higher ν = higher E (lower ν = \downarrow E)