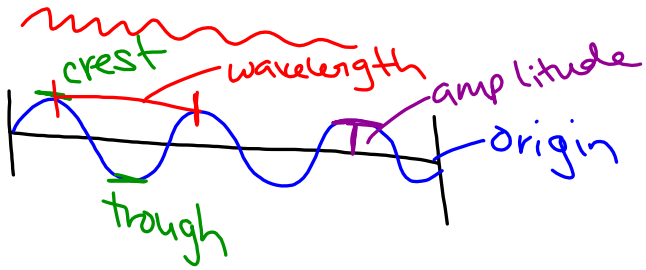
Wave Nature of Light

Reason: how do electrons occupy space around the nucleus?



wavelength (λ) - shortest distance between equivalence pts (crest to crest or trough to trough)

frequency (ν) - numbers of waves per sec

amplitude - height from origin to crest/trough

$$c = \lambda\nu$$

speed of light = 3.00×10^8 m/s $Hz = \frac{1}{sec}$

ex) frequency = 3.44×10^9 Hz
wavelength?

$$\frac{3.00 \times 10^8 \text{ m/s}}{3.44 \times 10^9 \frac{1}{\text{sec}}} = \frac{\lambda\left(3.44 \times 10^9 \frac{1}{\text{sec}}\right)}{3.44 \times 10^9 \frac{1}{\text{sec}}}$$

$$\lambda = 8.72 \times 10^{-2} \text{ m}$$

Electromagnetic spectrum: relates frequency & wavelength; describes energy of waves

p. 120 draw spectrum
p. 121 #1-4