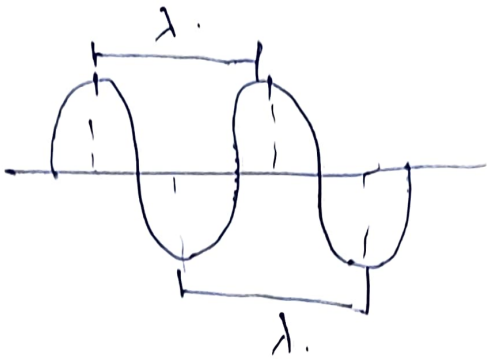
Structure of Atom II

Characteristics of Wave:

→ The five important characteristics are.

1) Wavelength (λ)
2) frequency (f or ϑ)
3) velocity (c or v)
4) Wave number ($\bar{\nu}$)
5) Amplitude (A).



Atomic spectra

1) Continuous spectra

→ Imagine a rainbow.
→ They just merge one after other

2) Line spectra:

→ Isolated colour lines.
→ Some sort of dark spaces in between

(Continuous spectra).

(Line spectra)

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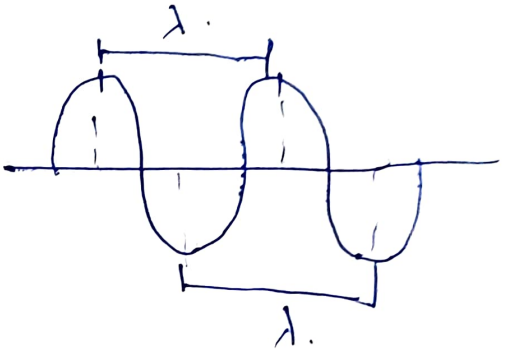

Atomic spectra

1) Continuos spectra
   - → Imagine a rainbow.
   - → They just merge one after other.
2) Line spectra:
   - → Isolated colour lines.
   - → Some sort of clear spaces in between

(Continuos spectra).

(Line spectra)

- EM waves does not require any medium for propagation.

- Energy $\propto$ (Amplitude)^2.

— Maxwell

→ $K.E = \frac{1}{2}mv^2$, $V = \sqrt{\frac{2E}{M}}$

$\lambda = \frac{h}{mv}$, $\lambda = \frac{h}{\sqrt{2Em}}$.

- Number of electrons in XX^{a-} ion is equals Number of electrons in X, number of $e^{\ominus}$ in [a] and number of $e^{\ominus}$ [a].

Eg: NO_3^- = 7 + 3(8) + 1

= 32 $e^{\ominus}$.

- Most used form of Energy expression

$E = \frac{hc}{\lambda} = \frac{12400}{\lambda}$ (approx.).

- $\frac{1}{\lambda} = R\left(\frac{1}{n_1^2} - \frac{1}{n_2^2}\right)$.

λ = wavelength

R = Rydberg const.

n_1, n_2 are states.