Module 6 relevant equations

$$c = \lambda \nu$$

$$E = h\nu = \frac{hc}{\lambda}, \quad \text{where } h = 6.626 \times 10^{-34} \text{ J s}$$

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

$$E_n = -\frac{kZ^2}{n^2}, \quad n = 1, \ 2, \ 3,$$

$$\Delta E = kZ^2 \left(\frac{1}{n_1^2} - \frac{1}{n_2^2} \right)$$

$$r = \frac{n^2}{Z} a_0$$

Where:

c = the speed of em radiation (light) = 2.998 E8 m/s
λ = wavelength (nm)
ν = frequency (cycles/s = Hz)
E = energy (J)
h = Plank's constant = 6.626 E-34 J-s
R = the Rydberg constant = 1.097 E7 m^{-1} (1/m)
n = integers or whole numbers
En = a quantized energy (J)
k = a constant = 2.179 E-18 J
Z = nuclear charge or atomic number
r = radius of atomic orbits
a_0 = the Bohr radius (5.292 E-11 m)

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