Constants, Conversion Factors and Equations (Exam II)

Constants and Conversion Factors:

$h = 6.626 \times 10^{-34}$ J·s

$c = 2.9979 \times 10^{8} \frac{\text{m}}{\text{s}}$

$1\ \text{J} = 1\ \frac{\text{kg} * \text{m}^2}{\text{s}^2}$

$N_A = 6.022 \times 10^{23}$

Equations:

$$d = \frac{m}{\text{V}}$$

$$\nu = \frac{c}{\lambda}$$

$E_{photon} = h\nu$

E_K (ejected electron) = E_{photon} - ϕ

$$E_K = \frac{1}{2} m \text{v}^2$$

$$\Delta E = -2.178 \times 10^{-18}\text{J}\left(\frac{1}{\text{n}_\text{f}^2} - \frac{1}{\text{n}_\text{i}^2}\right)$$

$E_{photon} = |\Delta E|$

$$\lambda_{matter} = \frac{h}{m\text{v}}$$

$M_i V_i = M_f V_f$