Constants, Conversion Factors and Equations (Exam II)

Constants and Conversion Factors:

$h = 6.626 \times 10^{-34}$ J·s $\quad$ $c = 2.9979 \times 10^{8} \frac{\mathrm{m}}{\mathrm{s}}$ $\quad$ $1\ \mathrm{J} = 1\ \frac{\mathrm{kg}*\mathrm{m}^2}{\mathrm{s}^2}$

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

Equations:

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

$\nu = \frac{c}{\lambda}$ $\quad$ $E_{\text{photon}} = h\nu$

E_K (ejected electron) = E_{photon} - ϕ $\quad$ $E_K = \frac{1}{2}m\mathrm{v}^2$

$\Delta E = -2.178 \times 10^{-18}\mathrm{J}\left(\frac{1}{\mathrm{n_f^2}} - \frac{1}{\mathrm{n_i^2}}\right)$ $\quad$ $E_{\text{photon}} = |\Delta E|$

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

$M_i V_i = M_f V_f$