Name: _____

Exam 3 Equations (Chapters 5-6)

$1cal = 4.184J$

$c_{H_2O} = 4.184\frac{J}{g\,K}$

$q = mc\Delta T$

$c = 2.998 \times 10^{8}{}^{m}/_{s}$

$\nu\lambda = c$

$E = h\nu = \frac{hc}{\lambda}$

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

$q = n\Delta H_{rxn}$

$\Delta H_{rxn} = \frac{-mc\Delta T}{n_{rxn}} \quad \left(n_{rxn} = \frac{n_{limiting}}{\nu_{limiting}}\right)$

$\Delta H_{rxn} \approx \Delta U_{rxn} = \frac{-C\Delta T}{n_{rxn}}$

$\Delta H_{rxn} = \sum_{products} \nu\Delta H_f - \sum_{reactants} \nu\Delta H_f$

$h = 6.626 \times 10^{-34} J\,s$

$\Delta E = R_H\left(\frac{1}{n_f^2} - \frac{1}{n_i^2}\right)$

$R_H = 2.179 \times 10^{-18} J$

$R_H = 1.097 \times 10^{7} m^{-1}$