This exam should have 50 questions that are all worth 2 points each. Bubble in your answer choices on the bubblehseet provided. Your score is based on what you bubble on the bubblesheet and not what is circled on the exam.

$R = 8.314$ J/mol·K

$$\ln\left(\frac{P_2}{P_1}\right) = \frac{\Delta H_{\text{vap}}}{R}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)$$

$R = 62.36$ L·torr/mol·K

$$\ln\left(\frac{K_2}{K_1}\right) = \frac{\Delta H_{\text{rxn}}}{R}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)$$

1 L·atm $= 101.325$ J

$$\ln\left(\frac{k_2}{k_1}\right) = \frac{E_{\text{a}}}{R}\left(\frac{1}{T_1} - \frac{1}{T_2}\right)$$

1 eV $= 1.602 \times 10^{-19}$ J

$$k = Ae^{-E_a/RT}$$

$c = 3.00 \times 10^8$ m/s

$$\text{pH} = \text{-log[H}^+]　　　　K_w = [\text{H}^+][\text{OH}^-]$$

$K_{\text{w}} = 1.0 \times 10^{-14}$ at 25°C

$$\text{pH} = pK_{\text{a}} + \log\frac{[\text{A}^-]}{[\text{HA}]}$$

$F = 96485$ C/mol e^-

$$\Delta G^\circ = -nFE^\circ　　　\Delta G^\circ = -RT\ln K$$

$$\Delta G = \Delta H - T\Delta S$$

anode | solution || solution | cathode

$$\Delta G = \Delta G^\circ + RT\ln Q$$

$$E = E^\circ - \frac{RT}{nF}\ln Q　　　E = E^\circ - \frac{0.05916}{n}\log Q$$

$$K_{\text{p}} = K_{\text{c}}(RT)^{\Delta n}$$

$$\frac{I \cdot t}{n \cdot F} = \text{moles}$$

$$C_{\text{gas}} = k_{\text{H}}\, P_{\text{gas}}$$

$$\ln\left(\frac{[\text{A}]_0}{[\text{A}]}\right) = kt　　　t_{1/2} = \frac{\ln 2}{k}$$

$$\Delta T_{\text{f}} = i \cdot k_{\text{f}} \cdot m　　　\Delta T_{\text{b}} = i \cdot k_{\text{b}} \cdot m$$

$$\frac{1}{[\text{A}]} - \frac{1}{[\text{A}]_0} = kt　　　t_{1/2} = \frac{1}{k[\text{A}]_0}$$

$$P_{\text{A}} = x_{\text{A}} \cdot P_{\text{A,pure}}　　　\Pi = i \cdot cRT$$

$$[\text{A}]_0 - [\text{A}] = kt　　　t_{1/2} = \frac{[\text{A}]_0}{2k}$$