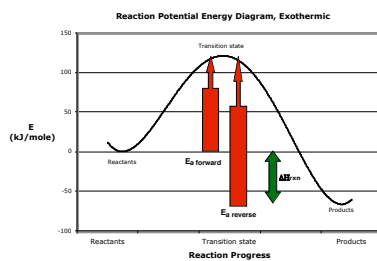


**Chemistry 116**  
**General Chemistry II**

**Kinetics Practice**



$$R = 8.314 \times 10^{-3} \text{ kJ/mole}\cdot\text{K}$$

$$0.0 \text{ }^\circ\text{C} = 273.2 \text{ K}$$

- 1) Determine the reaction stoichiometry, order of reaction with respect to A, and the value of the rate constant for the graph shown.  
TOP:  $A \rightarrow B + 2 C$ ; first order in A;  $k = 0.073 \text{ sec}^{-1}$
- 2) 0.541 M
- 3) 0.0785 M
- 4)  $E_a = 53.4 \text{ kJ/mol}$
- 5)  $A = 4.31 \times 10^9 \text{ sec}^{-1}$
- 6)  $k = 0.405 \text{ sec}^{-1}$
- 7)  $k_{\text{cat}}/k_{\text{uncat}} = 1.74 \times 10^7$
- 8) a)  $E_a = 200. \text{ kJ/mol}$   
b)  $E_a = 50. \text{ kJ/mol}$
- 9)  $K_{\text{eq}} = 14.0$ ;  $Q = 18.0$ ; reaction will go to form more pentane (shift towards reactants) at equilibrium here:  $P_{\text{pentane}} = 0.60 \text{ atm}$ ,  $P_{\text{propane}} = 4.40 \text{ atm}$  and  $P_{\text{ethene}} = 1.90 \text{ atm}$