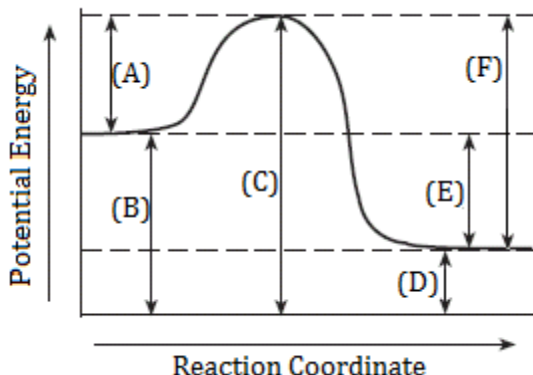


Problem Set #15

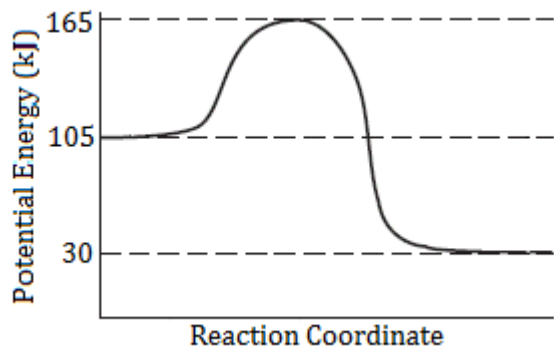
Name: _____

Part 1 - Use the following potential energy diagram to answer the questions.



1. Which of the letter(s) represents the heat of reaction (ΔH) for the forward reaction?
2. Which of the letter(s) represents the potential energy of the reactants for the reverse reaction?
3. Which of the letter(s) represents the E_a for the forward reaction?
4. Which of the letter(s) represents the potential energy of the activated complex?
5. Which of the letter(s) will change if a catalyst is added?

Part 2 - Use the following potential energy diagram to answer the questions.



6. What is the value for the ΔH of the forward reaction?
7. What is the value for the activation energy for the forward reaction?
8. What is the value for the potential energy of the activated complex?
9. What is the value for the potential energy of the reactants for the forward reaction?
10. What is the value for the ΔH of the reverse reaction?

11. What is the value for the potential energy of the reactants of the reverse reaction?

Part 3 - For each reaction given, identify whether the value for ΔH would be positive or negative and whether the value for ΔS would be positive or negative.

Reaction	ΔH	ΔS
$\text{H}_2\text{O (s)} + \text{heat} \rightarrow \text{H}_2\text{O (l)}$		
$\text{HC}_2\text{H}_3\text{O}_2 \text{ (l)} \rightarrow \text{H}^+ \text{ (aq)} + \text{C}_2\text{H}_3\text{O}_2^- \text{ (aq)} + \text{heat}$		
$\text{CO}_2 \text{ (g)} + \text{H}_2\text{O (g)} \rightarrow \text{C}_6\text{H}_{12}\text{O}_6 \text{ (s)} + \text{O}_2 \text{ (g)}$		