



Chemistry

Name: _____

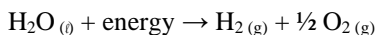
Section _____ ENTHALPY AND ENTROPY Date: _____

Directions (1-5): For each statement or question, choose the word or expression that, of those given, best completes the statement or answers the question. Some questions may require the use of the 2011 Edition Reference Tables for Physical Setting/Chemistry.

1 Which reaction has a positive heat of reaction?

- (1) $\text{CH}_4(\text{g}) + 2 \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + 2 \text{H}_2\text{O}(\text{l})$
- (2) $\text{CO}(\text{g}) + \frac{1}{2} \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g})$
- (3) $\text{NH}_4\text{Cl}(\text{s}) \xrightarrow{\text{H}_2\text{O}} \text{NH}_4^+(\text{aq}) + \text{Cl}^-(\text{aq})$
- (4) $\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l})$

2 Which phrase best describes the following reaction?



- (1) exothermic releasing energy
- (2) exothermic absorbing energy
- (3) endothermic releasing energy
- (4) endothermic absorbing energy

3 Which of the following reactions releases the greatest amount of energy?

- (1) $\text{CH}_4(\text{g}) + 2 \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g}) + 2 \text{H}_2\text{O}(\text{l})$
- (2) $\text{CO}(\text{g}) + \frac{1}{2} \text{O}_2(\text{g}) \rightarrow \text{CO}_2(\text{g})$
- (3) $\text{NH}_4\text{Cl}(\text{s}) \xrightarrow{\text{H}_2\text{O}} \text{NH}_4^+(\text{aq}) + \text{Cl}^-(\text{aq})$
- (4) $\text{H}^+(\text{aq}) + \text{OH}^-(\text{aq}) \rightarrow \text{H}_2\text{O}(\text{l})$

4 In a chemical reaction, the difference between the potential energy of the products and reactants is equal to

- | | |
|----------------|----------------|
| (1) ΔS | (3) ΔH |
| (2) ΔG | (4) ΔT |

5 A catalyst changes the potential energy of the

- | | |
|---------------|-----------------------|
| (1) products | (3) entropy |
| (2) reactants | (4) activated complex |

Directions (5-18): Determine whether the following show an increase, decrease, or negligible change in entropy.

