

**AP MULTIPLE CHOICE QUESTIONS
CH. 19, SET 3**

1999

27. Appropriate uses of a visible light spectrophotometer include which of the following?
- Determining the concentration of a solution of $\text{Cu}(\text{NO}_3)_2$.
 - Measuring the conductivity of a solution of KMnO_4 .
 - Determining which ions are present in a solution that may contain Na^+ , Mg^{2+} , Al^{3+}
- (A) I only (C) III only (E) I and III only
(B) II only (D) I and II only
66. When solid ammonium chloride, $\text{NH}_4\text{Cl}(\text{s})$, is added to water at 25°C , it dissolves and the temperature of the solution decreases. Which of the following is true for the values of ΔH and ΔS for the dissolving process?
- | | | |
|-----|------------------------------------|------------------------------------|
| | <u>ΔH</u> | <u>ΔS</u> |
| (A) | positive | positive |
| (B) | positive | negative |
| (C) | positive | equal to zero |
| (D) | negative | positive |
| (E) | negative | negative |

1999

Questions 5 – 8 refer to atoms for which the occupied atomic orbitals are shown below.

(A)	1s	2s	↑				
(B)	1s	↓↑	2s	↓↑			
(C)	1s	↓↑	2s	↓↑	2p	↑	↑
(D)	1s	↓↑	2s	↓↑	2p	↓↑	↓↑
(E)	[Ar]	4s	↓↑	3d	↓↑	↑	↑

- Represents an element that is unreactive.
- Represents an atom in an excited state.
- Represents an atom that has four valence electrons.
- Represents an atom of a transition metal.

AP chem test II

75. The Law of Entropy states that
- | | |
|--|---|
| (A) energy is neither created nor destroyed, but changed from one form to another. | (C) heat flows to a more concentrated medium. |
| (B) gas pressures are determined independently in a mixture. | (D) matter is neither created nor destroyed. |
| | (E) systems tend toward increasing disorder. |

Cliff's AP Chem

5. Arrange the following reactions according to increasing ΔS° values.

- $\text{H}_2\text{O}(\text{g}) \rightarrow \text{H}_2\text{O}(\text{l})$
- $2\text{HCl}(\text{g}) \rightarrow \text{H}_2(\text{g}) + \text{Cl}_2(\text{g})$
- $\text{SiO}_2(\text{s}) \rightarrow \text{Si}(\text{s}) + \text{O}_2(\text{g})$

- | | | |
|-----|---|----------------|
| | Lowest | Highest |
| (A) | $\Delta\text{S}^\circ(1) < \Delta\text{S}^\circ(2) < \Delta\text{S}^\circ(3)$ | |
| (B) | $\Delta\text{S}^\circ(2) < \Delta\text{S}^\circ(3) < \Delta\text{S}^\circ(1)$ | |
| (C) | $\Delta\text{S}^\circ(3) < \Delta\text{S}^\circ(1) < \Delta\text{S}^\circ(2)$ | |
| (D) | $\Delta\text{S}^\circ(1) < \Delta\text{S}^\circ(3) < \Delta\text{S}^\circ(2)$ | |
| (E) | $\Delta\text{S}^\circ(3) < \Delta\text{S}^\circ(2) < \Delta\text{S}^\circ(1)$ | |