

Chemistry 440-Chapter 2-Key Concepts

- Quantum numbers
 - n, l, m_l
 - what do they represent?
 - allowed values
 - Collective relationships
 - m_s
 - Allowed values
 - Combinations with other quantum numbers to give capacities
- Electronic Configurations
 - n+l rule
 - Aufbau principle
 - Pauli Principle
 - Hund's rule
 - Exceptions (filled and half-filled d subshell)
- Effective nuclear charge
 - Underlying principle
 - Slater's rules for calculating Z^*

Chapter 1-continued

- Periodic Trends
 - Be able to predict and understand the observed trends in atomic size, ionization energy and electron affinity
 - Understand the “confusion” with the definition of electron affinity
 - Carefully review the discussion of the need to consider total energy presented in the past two paragraphs on page 39
- It is recommended that you review the following problems. You should satisfy yourself that you understand how to answer them:
 - 2.2,2.3,2.4,2.6,2.10,2.12,2.14,2.19,2.21,2.22,