CHAPTER 4: What You've Learned & Stuff to Know

In addition to the electron configuration that you did at the end of the chapter, don't forget that this chapter covered problems at the beginning of the chapter, and a whole lot of concepts that you need to memorize and learn to apply.

- ❑ Make sure you know all the vocabulary, the bold-faced and italicized words
- ❑ Memorize and be able to list in order by frequency, wavelength, or energy the electromagnetic spectrum and the visible spectrum; know the wavelength range of the visible spectrum
- ❑ Know the symbols and units for wavelength, frequency, energy, and speed
- ❑ Memorize the speed of light *($c = 3.0 \times 10^8$ m/s)* and Plank's constant *($h = 6.626 \times 10^{-34}$ Js)*
- ❑ Memorize and be able to use the following formulas to solve problems:
  - ❖ $c = \lambda \nu$
  - ❖ $E = h\nu$
  - ❖ $E = \frac{hc}{\lambda}$
- ❑ Be able to illustrate, describe, and give examples of the photoelectric effect
- ❑ Be able to illustrate and describe spectroscopy
- ❑ Describe what happens when an element/electrons become excited
- ❑ Know what the following people did and describe their work: Planck, Einstein, Bohr, DeBroglie, Schrödinger, and Heisenberg
- ❑ Memorize and be able to apply the information regarding quantum numbers and their relationship to atomic structure
- ❑ Know the definitions of and be able to apply the Aufbau principle, Hund's rule, and the Pauli exclusion principle
- ❑ Write orbital notation or electron configuration notation for any element
- ❑ Identify an element based on its electron configuration
- ❑ Be able to determine the number of inner shell and outer shell electrons in an atom
- ❑ Describe the electron configuration of noble gases
- ❑ Be able to read and write noble gas notation
- ❑ Explain the deviant electron configuration of the transition metals

- ☐ **Give yourself plenty of time to study.** Do not try to complete all of these suggestions in one night. It is too much for you to keep straight. I would suggest a **minimum** of 3 hours of study time (not all at once).
- ☐ Read the *Chapter Summary* out loud. Write down the definitions of all the VOCABULARY. Practice memorizing them with the Interactive Review Games in the Student Premium section of the online textbook. Or, write down the definitions and notes on flashcards and (term on front, definition on back) and have someone call them out to you until when they begin the definition, you can finish it and give them the term.
- ☐ Review the illustrations in your textbook and understand the legends/ explanations that go with each one.
- ☐ Watch again the video clips that we saw in class. The links to these are in the posts of the vodcasts.
- ☐ Go through the chapter and re-work the Sample Problems and Practice Problems.
- ☐ Review the answers to the REVIEWING CONCEPTS, PROBLEMS, and CRITICAL THINKING questions from homework.
- ☐ A few days before the test on this chapter, read the "SECTION OBJECTIVES" at the beginning of each section review any topics that you think will cause you a problem. For topics you are not sure about, go back and watch the vodcast of the lesson on the website.
- ☐ Practice with the Interactive Review Games in the Student Premium section of the online textbook. *Did I mention that already?*
- ☐ Practice the online quizzes at http://www.sciencegeek.net/Chemistry/taters/directory.shtml