

CHAPTERS 4b & 5a: What You've Learned & Stuff to Know

In addition to the electron configuration that you did at the beginning of this unit, don't forget that there are a tons of definitions 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 from Chapter 4, Sections 2 & 3, and Chapter 5, Sections 1 & 2.
- ❑ 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
- ❑ Be able to explain the roles of Mendeleev and Moseley in the development of the periodic table and what we know about the reactivity of elements
- ❑ Know the major divisions of the periodic table and be able to identify the block an element is in and they type of element that it is (metal, nonmetal or metalloid).
- ❑ Using only electron configuration, be able to identify an element's period, block, group, and type.
- ❑ For each major group of elements and for individual elements we covered in class make sure you know the physical properties, chemical properties, occurrence, and uses (only the information that is from lectures).

Study Hints:

- ✧ Write down and memorize the definitions of all the VOCABULARY.
- ✧ Go through the chapter and re-work the Sample Problems, Practice Problems, and Sections Reviews. Write the answers down. Go back and re-memorize and re-study any of the sections that you think will cause you a problem.
- ✧ Answer the section quizzes – no peeking for answers in the chapter! Go back and re-memorize and re-study any of the sections that you think will cause you a problem.
- ✧ Review the answers to the homework questions from your homework. If there are any you still cannot answer, go back and watch vodcasts for those topics.
- ✧ **Do The Physics Classroom practice that's on your syllabus.**
- ✧ Practice the online quizzes at <http://www.sciencegeek.net/Chemistry/taters/directory.shtml>
- ✧ **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).