CHAPTER 4&5 ACCELERATED CHEMISTRY REVIEW SHEET

ATOMIC THEORY AND ELECTRON CONFIGURATION

The test contains 37 total questions – 17 multiple choice, 6 fill in the blank, 7 short answer, and 7 problems. You should study the following review sheet, your previous two quizzes, book problems, and practice quizzes and worksheets. Tests are weighted at 60% of your grade so be sure to prepare properly.

For the test you should be able to:

1. Describe the typical arrangement of an atom including the sub atomic particles location, charge, and mass.
2. Determine an elements numbers of protons, neutrons, and electrons.
3. Identify an elements atomic number, mass number, and atomic mass.
4. Describe and identify an isotope.
5. Identify the subatomic particle that determines the identity of the atom.
6. Calculate the mass number of an atom.
7. Write isotopic symbols for different isotopes.
8. Describe the properties of Alpha, Beta, and gamma radiation.
9. Write nuclear fusion and fission reactions using alpha, beta, and gamma radiation.
10. Describe the creation of elements in stars. (study the article on the class website)
11. Describe how heavy elements are produced
12. Identify the primary source of energy for our sun.
13. Describe the dual nature of light
14. Describe the characteristics of a wave
15. Explain the relationship between wavelength, frequency, and energy.
16. Know the shapes of the “s” and “p” orbitals
17. Identify elements given their electron configurations
18. Apply Hunds rule, paulis exclusion principle,and Aufbau’s principle to the writing of electron configurations.
19. Calculate average atomic mass given mass of each isotope and their abundancies.
20. Write complete ground state electron configurations, noble gas configurations, and orbital diagrams for any element on the periodic table.
21. Describe how a gaseous element can produce light.
22. Calculate the wavelength or frequency of electromagnetic radiation
23. Calculate the Energy of a photon.
24. Identify the numbers of electrons in a energy level, sublevel, or orbital.
25. Identify the number of orbitals in a sublevel
26. Identify the number of sublevels in an energy level.