Lecture Worksheet (Chapter 7)

1. (a) Define the effective nuclear charge of a many electron atom.

   (b) What causes screening (or shielding)?

   (c) How could you estimate the effective nuclear charge experienced by an outer electron in the atom Mg?

1. What is the periodic trend for increasing size of atoms in a family? In a period?

2. What is the periodic trend for increasing size of ions of the same charge in a family?

   What is the trend in size for ions with the same electron configuration (isoelectronic series)?

3. (a) Define ionization energy.

   (b) How can you tell from successive ionization energies that a core electron has been removed?

   (c) What is the periodic trend for increasing first ionization energy?

5. What is the electron configuration of Li⁺ and Fe²⁺?


7. Using the following list of elements: C, Na, F, Cs, Ba, Ni.

   (a) Which are metals?

   (b) Which one has the most metallic character?__________

   (c) Which one (from the complete list given above) has the least metallic character?__________