Bauck's CHEMISTRY Ch. 3 & 8 Test Review

This is an optional assignment due the day of the test.

Materials: loose leaf paper, pen and/or pencil (You will be given a periodic table.)

Test date: _____

Test value: 200 points

Test format: multiple choice**;** "thought questions" (short essays) **;** "periodic trends" questions (like the chapter practices)**;** "element analysis" questions (see the following format):

For each element, give the following:

a) group number
b) period number
c) atomic number
d) metal, nonmetal, or metalloid?
e) number of valence electrons
f) # of electrons needed to fill valence "shell"
g) Draw the electron dot (Lewis dot) diagram.

Topics to study:

1) **Alkali metals**— Which group is this? Identify the elements in that group.
2) **Alkaline earth metals**— Which group is this? Identify the elements in that group.
3) **Atomic size**—What is it? Be able to identify trends across a period and down a group.
4) **Chalcogens**—Which group is this? Identify the elements in that group.
5) **Crystal lattice shapes**—Be able to identify what "FCC," "BCC," and "HCP" mean. Draw these three shapes.
6) **Conductivity**—What is this? Where and how does this occur?
7) **Delocalized electrons**—Where are these observed? What is their significance?
8) **Diatomic molecules**—What is this? What are the "Super Seven"?
9) **Electron dot diagrams (Lewis Structures)**—How should the dots be placed (use the method given in the notes)? Be able to do them for any given atom. Give one example for this review.
10) **Electronegativity**—What is this? Be able to identify trends across a period and down a group.
11) **Groups**—Where are they? What does the "A" group number tell you about the number of valence electrons in an atom?
12) **Halogens**—Which group is this? Identify the elements in that group.
13) **Inert**—What does this mean? Which elements are inert?
14) **Inner transition elements**—Where are they? What are other names for this area? Contrast with **transition elements**.
15) **Ionization energy**—What is it? Be able to identify trends across a period and down a group.
16) **Law of Octaves**—What does this law say? What is an octave?
17) **Mendeleev**—What was his contribution to the periodic table?
18) **Metals**—Where are they? Identify examples and characteristics.
19) **Metalloids**—Where are they? What are other names for these elements? Identify examples and characteristics.
20) **n-doping**—How does this happen? Be specific.
21) **Noble Gases—**Which group is this? Identify the elements in that group. Why are they inert?
22) **Nonmetals**—Where are they? Identify examples and characteristics.
23) **Octet rule**—How does this work? What are some exceptions to this rule?
24) **p-doping**—How does this happen? Be specific.
25) **Periodicity**—What is this? Give examples.
26) **Periods**—Where are they? How many are there? What does the period number tell you about the number of electron "shells" in an atom?
27) **Representative elements**—Where are they? Contrast with **transition elements.**
28) **Shielding effect**—What is this? How does this affect atomic size trends across periods?
29) **Semiconductors**—What are they? (see **metalloids**)
30) **Transition elements**—Where are they? Contrast with **representative elements.**
31) **Triad**—What is this? Give an example of what is a triad and what isn't.
32) **Valence number**—What is this? How does this relate the electron dot diagrams and the placement of an atom in the periodic table?