

CHM 151
Recitation #9, 29 October 2008

1. Write the **electron configurations** for the following ions.



2. **True or False.**

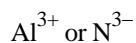
a) An anion (negative ion) is larger than its parent atom.

b) Fluorine has a greater electron affinity than lithium.

3. Arrange the following atoms in order of **increasing** atomic radius.

Al, S, Ca, Ba, O

4. Which of the following ions is **smaller**?



5. Which element will display an unusually *large* jump in ionization energy values between I_2 and I_3 , the second and third ionization energies?

a) Na b) Mg c) Al d) Si e) P

6. Which of the following observations does **not** imply an extra stability for half-filled and filled orbital subshells?

- a) The 1st ionization energy of N is larger than the 1st ionization energy of O.
- b) The 2nd ionization energy for Na is almost 10 times larger than the 1st ionization energy for Na.
- c) The electron affinities of Be, N, and Ne are zero.
- d) He, Ne, and Ar are inert; Kr, Xe, and Rn form compounds with only the most reactive elements.
- e) All of these observations imply an extra stability for half-filled and filled orbital subshells.

7. Which of the following bonds has the **greatest** ionic character. (**Hint:** Consider the electronegativity of the atoms comprising the bond.)

O-H, K-F, N-N, Na-I

8. Consider an element (X) with a valence electron configuration of ns^2np^5 . What is the most likely formula of the ionic compound formed between this element and calcium (Ca)?

9. Write the best Lewis structure for the following molecules:

Molecule	No. of valence electrons	Lewis Structure
AsH ₃		
O ₃		