Grossmont College Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Spring 2016

Chemistry 141 Quiz 6

1. Write orbital diagrams of the valence electrons for each of the following elements and determine the number of unpaired electrons in each and if it is paramagnetic or diamagnetic:
2. Zinc (Zn)
3. Selenium (Se)
4. The first four ionization energies of yttrium (Z=39) are:

IE1= 616 kJ/mol, IE2= 1180 kJ/mol, IE3= 1980 kJ/mol, IE4 = 5960 kJ/mol.

Answer the following questions based on these data:

1. Explain the increasing trend in the successive ionization energies of yttrium.
2. Explain the large increase in IE4 compared to IE3.
3. Explain why alkali metals have a greater electron affinity than alkaline earth-metals.
4. Arrange the atoms or ions in each of the following sets in order of increasing ionic radius: Br–, Na+, Mg2+

Smallest \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Largest

1. Complete the following

|  |  |
| --- | --- |
| Molecule | Lewis Diagram / resonance forms (remember to minimize formal charge) |
| BrO2-  Orbital geometry  Molecular geometry  Hybridization of Bromine  Determine bond angle around Bromine |  |