**Homework #7: Chemistry 1013 Spring 2014**

**Due Monday 31 March in class 23pts (1 pt/answer)**

Your name: \_\_\_\_\_\_\_\_\_\_answers\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**7.0 . Following the electrons: Writing Complete Electronic configurations**

Write the complete electronic configurations for the elements below

(for elements containing d electrons, put the s orbitals in their row after the d shell,e.g….3d44s2)

1. **B 1s22s22p1**
2. **Cl 1s22s22p63s23p5**
3. **Mn 1s22s2 2p63s23p6 3d54s2**
4. **Sb 1s22s2 2p63s23p6 3d104s24p6 4d105s25p3**
5. **Ca 1s22s2 2p63s23p6 4s2**

**7.1. Write the abbreviated configurations for the elements below. For elements with d electrons, make sure to follow d- switch and filled/half-filled/empty rules. (2 pts each. 10 pts total)**

1. **Si [Ne]3s23p2**
2. **Mg [Ne]3s2**
3. **Cu+1 [Ar] 3d104s0**
4. **Ni [Ni] 3d104s0**

1. **Cr+1 [Ar] 3d54s0**

**7.3. Who am I ?**

1. **I am neutral and 1s22s22p5 = \_F\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (element symbol)**
2. **I am neutral and [Ar] 3d6 4s2\_\_\_Fe\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(element symbol)**
3. **I am neutral [Kr] 4d105s25p2 \_\_\_Sn\_\_\_\_\_\_\_\_\_\_\_(element symbol)**
4. **I am charged +2, and have the configuration: [Ar] 3d54s0  \_\_\_\_\_\_Mn\_\_\_\_\_\_2+**

**7.4. What two elements have no 3 or 4 d electrons and 5 valence electrons in their ground state ?**

**(hint: see problem 5.15 and the answers in text if you are stuck on this one.)**

**\_\_\_\_N\_\_\_\_\_(ELEMENT SYMBOL) \_\_\_\_\_P\_\_\_\_\_(ELEMENT SYMBOL)**