**Homework #7: Chemistry 1013 Spring 2012**

 **Due Monday 26 March in class 15 pts (1 pt/answer)**

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

**7.1. 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 1s2 2s2 2p1**
2. **Cl 1s2 2s2 2p6 3s2 3p5**
3. **Mn 1s2 2s2 2p6 3s2 3p6 3d5 4s2**
4. **Sb 1s2 2s2 2p6 3s2 3p6 3d10 4s2 4p6 4d10 5s2 5p3**

1. **Sc1+ 1s2 2s2 2p6 3s2 3p6 3d1 4s1 also accepted: 1s2 2s2 2p6 3s2 3p6 4s2 3d0**

**7.2. Write the abbreviated configurations for the elements above:**

1. **B [He] 2s2 2p1**
2. **Cl [Ne] 3s2 3p5**
3. **Mn [Ar] 3d5 4s2**
4. **Sb [Kr] 4d10 5s2 5p3**

1. **Sc1+ [Ar] 3d14s1 also accepted [Ar] 4s23d0**

**7.3. Who am I ?**

1. **1s22s22p5 = \_\_\_\_\_\_\_F\_\_\_\_\_\_\_\_\_\_ (element symbol)**
2. **[Ar] 3d6 4s2\_\_\_\_\_\_\_Fe\_\_\_\_\_\_\_\_\_\_\_(element symbol)**
3. **[Kr] 4d105s25p2 \_\_\_\_\_Sn\_\_\_\_\_\_\_\_\_(element symbol)**

**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.)**

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