ELECTRON CONFIGURATION WORKSHEET

1. What is the subshell designation (e.g. 2p, 3d…) for the following cases?

   a) $n = 2, l = 0$ _____ b) $n = 4, l = 3$ _____

   c) $n = 5, l = 1$ _____ d) $n = 3, l = 0$ _____

   e) $n = 6, l = 1$ _____ f) $n = 5, l = 2$ _____

2. The quantum numbers listed below are for 4 different electrons in the same atom. Arrange them in order of increasing energy.

   a) $n = 4, l = 0, m_l = 0, m_s = ½$ _____ least energy

   b) $n = 3, l = 2, m_l = 1, m_s = ½$ _____

   c) $n = 3, l = 2, m_l = -1, m_s = ½$ _____

   d) $n = 3, l = 1, m_l = 1, m_s = -½$ _____ highest energy

   Do any have the same energy? _____ which ones? _____

3. Write the complete electron configuration (simplified) for the following, using only the periodic table as a guide (do not use noble gas core configuration):

a) Cd _____

b) As _____

c) Sr _____

d) Sb _____

e) S _____

4. Write the outer shell electron configurations for the following, using the periodic table as a guide (this means use the noble gas core configurations)

a) K _____

b) Al _____