Review - Section 2A

Name: _____

1) Draw a diagram of all the different shapes of an s-orbital and a p-orbital. Label the number of electrons held by each.

2) Write out the configurations for the following elements:

a) Yttrium

b) Thulium

c) Polonium

d) Calcium

e) Lanthanum

f) Ruthefordium

3) Draw an orbital diagram for copper:

4) List the quantum numbers for the following elements:

a) Lawrencium

b) Strontium

c) Phosphorous

d) Fermium

5) Identify the following elements:

a) [Xe] $6s^1 4f^{14} 5d^5$

b) $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^3$

c) n = 4, l = 1, m = 0, s = -1/2

d) 5, 3, +2, +1/2

6) Determine the number of protons, neutrons, and electrons in each of the following:

a) $^{41}_{20}Ca^{+2}$

b) $^{209}_{82}Pb^{-4}$

c) $^{188}_{76}Os^{+4}$

d) $^{170}_{68}Er^{+3}$

7) Write complete chemical symbols for elements with the following sub-atomic particles:

a) 35 protons, 45 neutrons, 36 electrons

b) 60 protons, 89 neutrons, 57 electrons

8) You are given the following elements: silicon, tin, iodine and chlorine. Which of these would have:

a) the largest atomic radius

b) the greatest electronegativity

c) the smallest electronegativity

d) the smallest ionic radius

e) the greatest ionization energy

f) the smallest ionic radius

9) Calculate the average atomic mass of the element with the following isotope data, and then identify the element X.

Isotope Number	Mass (amu)	Percent Abundance
X-192	191.961	0.79 %
X-194	193.963	32.9 %
X-195	194.965	33.8 %
X-196	195.965	25.3 %
X-198	197.968	7.2 %