CHAPTER 5 REVIEW

1. Complete the following table for atoms and ions

Symbol	Atomic #	Mass #	Proton #	Neutron #	Electron #
$^{38}_{18}Ar$					
$^{18}_{8}O$					
$^{36}_{16}S^{2-}$					
X^{-}				20	18
		26		14	10

2. Calculate the average atomic mass of nickel that has five naturally occurring isotopes

Isotope	Mass of Atom in amu	% Abundance in Nature
Nickel-58	57.9353 amu	67.88%
Nickel-60	58.9332 amu	26.23%
Nickel-61	60.9310 amu	1.19%
Nickel-62	61.9283 amu	3.66%
Nickel-64	63.9280 amu	1.08%

3. What is the average atomic mass of bromine?

Isotope	Mass of Atom in amu	% Abundance in Nature
Bromine-79	78.918336 amu	50.69%
Bromine-81	80.916289 amu	49.31%

4. Naturally occurring indium consists of two isotopes

Atomic mass of indium	114.82 amu
Isotopic mass of indium-113	112.9043 amu
Isotopic mass of indium-114	114.9041 amu

5. Calculate the actual atomic mass of Cu-65

Atomic mass of copper	63.546 amu	100%
Isotopic mass of copper-63	62.9298 amu	69.09%
Isotopic mass of copper-65	x amu	30.91%

6. Compare the similarities and differences between Rutherford's and Bohr's theories of the atom.

7. Compare the similarities and differences between Bohr's model and the Quantum Mechanical model of the atom.

8. Write the electron configuration and draw the orbital diagram for the following:

    a. Si

    b. Cr

    c. Br

    d. K

    e. Fe

    f. P

9. Write the core notation and # of valence electrons for the following:

    a. P^{3-}

    b. Mg^{2+}

    c. Br^{1-}

    d. As^{3+}

    e. Te^{2-}

    f. Li^{+}