1. Underline the atom in each of the following pairs that has the lower electronegativity.

a. Li - **Na** b. **Cs** - Rb c. **Cs** - Ba d. Cl - **Br** e. **Fe** - Ni f. **S** - Cl

2. List four general characteristics of compounds that have ionic bonds.

a. Composed of charged ions
b. Solids insulate
c. Gases/liquids conduct
d. High melting Points

3. Classify the bonds between the following pairs of atoms as ionic (I) or covalent (C).

_I_ a. Sr-Cl
_C_ b. N-O
_I _ c. K-F
_C_ d. S-O
_I _ e. Ba-Cl
_I_ f. Mg-O

4. List three general characteristics of compounds formed by covalent bonds.

a. Does not contain ions
b. Low melting points
c. Insulates in all phases

5. List three characteristics of metals.

a. Shiny
b. Malleable
c. Conductor

6. How does the bonding of 2 metal atoms differ from the bonding in 2 nonmetal atoms?

Metallic bonds are delocalized. In contrast, nonmetals tend to form covalent bonds, which are different because covalent bonds exist in fixed positions between nuclei. Metallic bonds are spread throughout the substance.

7. Predict whether the following bonded atoms will form salts (S) or molecules (M).

_M_ a. fluorine and hydrogen
_M_ b. hydrogen and oxygen
_S _ c. sodium and chlorine
_M_ d. silicon and oxygen
_M _ e. carbon and phosphorus
_M_ f. hydrogen and sulfur
_S _ g. iodine and sodium
_S _ h. beryllium and oxygen

8. Explain why ionic compounds are electrically neutral.

Ionic compounds are electrically neutral because the positive charge from the cation(s) and the negative charge from the anion(s) cancel each other out.