Bauck's CHEMISTRY Ch. 9 Test Review *This is an optional assignment due the day of the test.*

Materials: loose leaf paper, pen and/or pencil, calculator (optional), colored pencils or thin markers (You will be given a periodic table. Also, the following will be given on the test: VSEPR shapes table, electronegativity values table, and bond strength range table.)

Test date: _____

Test value: 200 points

Test format: multiple choice**;** 5 short answer essays**;**
bond strength: questions:

BOND STRENGTH Tables are on the last page of the test. For each of the following:
a) calculate the bond strength. Show work! b) classify each bond as NONPOLAR COVALENT, MODERATELY POLAR COVALENT, VERY POLAR COVALENT, or IONIC.

VSEPR:

VSEPR For each of the following molecules:
a) Draw the electron dot diagram (Lewis structure). Use two different colors for the different atoms. b) How many bonding pairs are on the central atom? c) How many nonbonding pairs are on the central atom? d) What is the shape of the molecule?

TOPICS TO STUDY:

1) **Bonding (shared) pair**—What is this? Where is it found? Give an example.
2) **Covalent bond**—What is this? Where is it found? Contrast with **ionic bond**.
3) **Crystal lattice**—What is it? Where is it found? Which type of compounds form crystals?
4) **Diatomic molecules** ("Super Seven")—What are their names and formulas? Draw their electron dot diagrams. Identify which ones have single, double, and triple bonds.
5) **Dipole**—What is it? How can you identify if a compound is a dipole? Draw a simple dipole.
6) **Electron dot diagram (Lewis structure)**—What is this? Write electron dot diagrams for individual atoms and molecular compounds.
7) **Electronegativity**—What is this? Which element is the most electronegative, and why? Which elements are the least electronegative, and why? How are electronegativity values used to determine bond strength?
8) Formula classification (background info for test): What is the difference between **BI, BM,** and **TI** compounds?
9) **Formula unit**—What is it? Give an example of a formula unit. Contrast with **molecule**.
10) **Hydrogen bonding**—What is this? Where can it be found? Why is this not a real "bond"? Give an example.
11) **Intermolecular**—What does this mean? Give examples of intermolecular forces.
12) **Ionic bond**—What is this? Where is it found? Contrast with **covalent bond**. Which bond is stronger? Why?
13) **Molecule**—What is it? Give an example of a molecule. Contrast with **formula unit**.
14) **Nonbonding (unshared) pair**—What is this? Where is it found? Give an example.
15) **Polar**—What does this mean?
16) **Polar covalent bond**—What is this? Where is it found?
17) **Polar molecule**—What is this? Where is it found?
18) **VSEPR**—What does this acronym stand for? How is it used? Be prepared to predict molecular shape, given the VSEPR table.