

Bauk's CHEMISTRY Ch. 8 Test Review
This is an optional assignment due the day of the test.

Materials: loose leaf paper, pen and/or pencil, calculator, 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, table of cations with multiple charges; bond strength range table.)

Test value: 200 points

Test format: multiple choice; formula writing and naming; short answer essays; bond strength calculations; electron dot diagrams for BM molecules; VESPR shapes

TOPICS TO STUDY:

- 1) **Bonding (shared) pair**—What is it? Where is it found? Give an example.
- 2) **Coordinate covalent bond**—What is it? Compare and contrast it to a typical covalent bond.
- 3) **Covalent bond**—What is it? Where is it found? Contrast with **ionic bond**.
- 4) **Crystal lattice**—What is it? Where is it found? Which type of compounds form crystals?
- 5) **Diatomic molecules** (“Super Seven”)—What are their names and formulas? Draw their electron dot diagrams. Identify which ones have single, double, and triple bonds.
- 6) **Dipole**—What is it? How can you identify if a compound is a dipole? Draw a simple dipole.
- 7) **Electron dot diagram (Lewis structure)**—What is this? Write electron dot diagrams for individual atoms and molecular compounds.
- 8) **Electronegativity**—What does this measure? 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?
- 9) **Exothermic reaction**—What is it? Contrast with **endothermic reaction**.
- 10) **Formula classification:** What is the difference between **BI**, **BM**, and **TI** compounds? Be able to write and name chemical formulas: BM from this chapter and BI/TI from last chapter. Review the 20 polyatomic ions.
- 11) **Formula unit**—What is it? Give an example of a formula unit. Contrast with **molecule**.
- 12) **Hybrid orbitals**—What are they? In which types of bonds are these found: sp, sp², sp³.
- 13) **Ionic bond**—What is it? Where is it found? Contrast with **covalent bond**. Which bond is stronger? Why?
- 14) **Molecule**—What is it? Give an example of a molecule. Contrast with **formula unit**.
- 15) **Nonbonding (unshared) pair**—What is this? Where is it found? Give an example.
- 16) **Pi (π) bond**—What is this? Where is it found?
- 17) **Polar**—What does this mean?
- 18) **Polar covalent bond**—What is it? Where is it found?
- 19) List the ten **Prefixes** and numerical values used in naming BM compounds.
- 20) **Resonance**—What is it? How does it work?
- 21) **Sigma (σ) bond** – What is it? Where is it found?
- 22) **VSEPR**—What does this acronym stand for? How is it used? Be prepared to predict molecular shape, given the VSEPR table.

*** Note ***

There will be at least one question pertaining to material in past chapter(s) or unit(s).