**Study Guide**
for Unit Exams in Chemistry A

Unit V: Elements Form Compounds

The following provides information about the content of this exam. Of course, any topic covered in the unit may be represented on the exam. Please use this sheet as a guide as you study. As always, let me know if you have any questions!

Exam Format:

* 40 Multiple Choice/True or False (2-3 points each)

Formulas to Know:

* N/A

Material to Review: (Be able to…)

* Section A – Ionic Compounds
1. Explain how atoms form bonds to acquire a stable arrangement of electrons.
2. Define ionic bond.
3. Predict and write chemical formulas for ionic compounds.
4. Name common binary and polyatomic ionic compounds.
5. Investigate and compare the physical and chemical properties of ionic compounds and pure metals.
* Section B – Covalent Compounds
1. Define covalent bond.
2. Predict and write the molecular formulas of covalent compounds.
3. Use Lewis dot structures to represent molecules of covalent compounds.
4. Name common covalent compounds.
5. Investigate and compare the physical and chemical properties of covalent compounds.
* Section C – Compound Structure
1. Explain resonance and write resonance structures.
2. Explain exceptions to the octet rule.
3. Use the valence shell electron pair repulsion (VSEPR) model to predict molecular geometry.
* Section D – Special Bonds
1. Use the structural formula of a molecule to determine polarity.
2. Identify and characterize types of intermolecular forces: dipole-dipole, hydrogen bonding, London-dispersion, van der Waals.
3. Explain how the types of intermolecular forces affect the physical properties of compounds.
* Section E – Organic Chemistry
1. Explain the unique bonding characteristics of carbon.
2. Apply simple formulas for naming and drawing simple hydrocarbons and isomers.
3. Show the connection between amino acids, organic chemistry, and functional groups.
4. Recognize that proteins, starches, and other large biological molecules are polymers

Terms to Know:

*(Make sure you can define and discuss each)*

* Lewis Dot Structure

### Resonance Structure

### Octet Rule

* Polar Bond
* Polar Molecule
* Intermolecular Forces
* Dipole

### Alkenes and Alkynes

### Isomers