**General Chemistry Topics I Must Be Proficient In: \*Being weak in any of the topics below will make organic chemistry very difficult. Please review in detail.**

Nomenclature is expected for general chemistry molecules, acids, bases

Lewis Structures

Formal Charges – you should be able to quickly do this!

Hybridization

Sigma versus Pi bonding

Bond Strength and Length

Geometry, Bond Angle, Hybridzation Memorized: linear, trigonal planar, tetrahedral

Polar versus Nonpolar

Electronegativity Trend of Atoms

Intermolecular Forces – these are not bonds; these are attractions between molecules and you need to know all of them and how to predict them quickly.

 What are the strengths of Intermolecular Forces? How does strength vary amongst a particular intermolecular force?

 How do intermolecular forces affect melting point? Boiling point?

 How do impurities affect a pure substances melting point/boiling point….

 Why does melting point / freezing point depression occur? (explain using intermolecular forces)

 Why does boiling point elevation occur? (explain using interm. forces)

Acids vs. Bases

 Arrhenius, Bronsted-Lowry, and Lewis Theories

Ka, pKa, pH – what do all these mean? How to find them?

Writing Acid Base Neutralization Reactions (and other double displacement reactions)

Used in lab all the time:

All Intermolecular Forces topics above

Stoichiometry Calculations- Limiting Reactant, Theoretical Yield, Percent Yield

Conversions between mass and volume using solubility or using density

Conversions between moles and grams using molar mass