**PO # 3 Unit Exam**

**Chapters 9, 10, & 11**

It is important that you conceptually understand the following, as well as support your understanding of these concepts mathematically. You can expect AP Multiple Choice and AP FRQ style questions on this exam.

* Heating/Cooling Curve. Calculate energy of a substance changing phase and interpret a heating/cooling curve for any substance.
* How does a substance’s molecular structure effect the substance’s boiling point?
* Calculating enthalpy of reaction from bond enthalpies. If an overall chemical reaction is endothermic (or exothermic), what does that tell you about the bond energies of the individual substances that make up the chemical equation?
* What affect does unshared pairs (lone pairs) have on bond angles of a substance?
* Would the size and charge of an ion have an effect on its interaction with water? How so and why? Could you give examples of this concept with a few cations?
* Interactions between DNA molecules
* What are the different types of IMFs and how do they affect boiling points? Could they all affect boiling points? How and why?
* What is vapor pressure?
* What is lattice energy and could pick three pairs of oppositely charged ions and order them from lowest to highest in lattice energy?
* What are the molecular shapes I asked you to memorize?
* Incomplete octets, free radicals, and expanded octets (be familiar with these odd balls)
* Review hybridization and memorize the ones I told you to memorize.