

## CHEM 251 Exam #1 STUDY GUIDE

The exam will take place in AS 1614B from 2:00 until 3:00 on Wed Feb 11.

The quiz will be over the Solubility, Crystallization and Extraction, It will be worth 80 pts and you will have an hour to take the exam. There will be no NMR on this quiz

In general, any pre-lab or post lab questions that were assigned to these experiment are good examples of what could be on the test. Also see the sample exam posted on the website.

### **Solubility.**

Know the basic solubility rules. Know how to assess the polarity of a compound. Understand the solubility of organic acids and bases (amines)—know the structures for a deprotonated acid and protonated base (why are they water soluble?) Know how to predict if two compounds would be miscible (soluble) or not. Good practice questions are questions 1-5 on pg 19-20 of PLKE

### **Crystallization**

Be able to do the pre-lab calculation on pg 23-24 (using the temperature vs solubility chart on pg 648). Understand why a good crystallization solvent is one that is soluble hot/insoluble cold. Understand why it is important to cool the solution slowly when crystallizing. Understand why % recoveries are always less than 100% Understand the solubility curves on pg 648 (fig 11.1). Also good questions are # 1 and #8 on pg 667-668

### **Extraction**

Be able to **predict** what the partition coefficient would be for a given compound in 2 solvents (would K be less than 1, greater than 1?). Understand and be able to draw flow chart on pg 38.(If given and acid and or base mixed with a neutral compound use the flow chart to show how you would separate them)