

CHE 173L**Winter, 2005****Lab Final Exam Specific Objectives**

The lab final exam will consist of ~10-20 multiple choice and or short explanation questions/problems directly related to the laboratory experiments you conducted during winter quarter. You may bring your laboratory notebook and use it during the exam. As previously announced, the exam will be given in your laboratory section during the week of March 7th (each section will be given a different version of the exam). Use the following specific objectives in your preparation for the exam:

1. Be able to interpret IR spectra, mass spectra, and ^1H and ^{13}C NMR spectra or be able to draw these types of spectra for a given compound (you may bring and use your green sheets).
2. Know how to calculate the IHD of a given molecular formula.
3. Understand the mechanisms for each of the reactions you ran this quarter.
4. Understand that the peak areas in a gas chromatogram of a mixture are proportional to the component masses and know how to use this information.
5. Understand the technique of recrystallization.
6. Understand the purpose for each step in the work-up procedures ("separation and purification") for each reaction you ran-- understand the chemistry that's going on.
7. Understand what phase transfer catalysts are and how they work.
8. Understand the purpose of using a drying tube; understand the process of liquid-liquid extraction using a separatory funnel (which layer is which, and where is your product?!), and understand the process of drying an organic solution using a drying agent like MgSO_4 and what to do with the drying agent when it's done its job.
9. Understand why the glassware for some experiments must be very dry.
10. Understand the proper way to set up the glassware apparatus for each experiment.