Prelab Assignment 3

Assigned Reading: "Techniques in Organic Chemistry" Technique 10.1-10.4, 10.6, 11.1, 11.4

Pre-lab questions:

1. Given a partition coefficient of 1.5, how many 15 mL extractions are required in order to extract 90% of a compound into the organic layer. Assume you are starting with 1 gram of compound dissolved in 50 mL of water. Show your work for credit.
2. Why is it important to "vent" a separatory funnel during shaking?
3. How can you avoid the formation of an emulsion?
4. Typical organic extraction solvents have the following densities: Ether, 0.7 g/mL, ethyl acetate, 0.7 g/mL, dichloromethane, 1.3 g/mL. Will each of these solvents be the top or bottom layer when placed in a separatory funnel with an aqueous solution?
5. What type of data will you use to answer the lab question? Draw a table that will effectively communicate the data that your team of four will obtain.
6. Why in step 5 of the procedure is it better to leave too much liquid in the sep funnel than drain too much out?
7. Why in step 7 of the procedure is it better to drain too much liquid out of the sep funnel than leave too much in?
8. Why should the Erlenmeyer flask in step 8 be clean and dry?
9. What is the purpose of the sodium sulfate in step 9?
10. What should you look for in a melting point determination to determine the true onset of melting? Give one common error that leads to an incorrect melting point determination.