Extraction Lab Report

NAME:_____

PARTNER'S NAME:_____

LAB SECTION:_____

DATE:_____

% SCORE:

Laboratory Techniques: Extraction

	Points possible	
Prelab Flow chart		
A. Lab Data		
B.Acid base reactions		
C. Questions		
D.Discussion		
Total		

B. ACID-BASE REACTIONS

1. <u>Using structures,</u> write the acid-base reactions for extractions or reactions performed in this experiment.
2. In each reaction CIRCLE the water soluble organic compound

a) Extraction of benzoic acid into the aqueous layer using sodium hydroxide

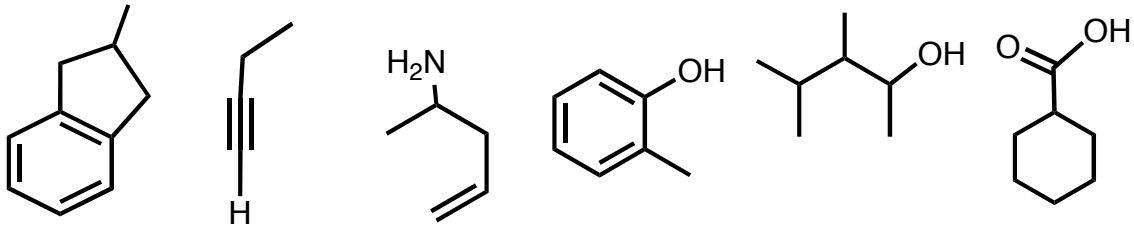
b) Extraction of ethyl p-aminobenzoate into the aqueous layer using hydrochloric acid

c) Precipitation of benzoic acid using hydrochloric acid

d) Precipitate of free amine using sodium hydroxide

C. QUESTIONS:

1. Indicate which compound(s) you would expect to be soluble in 3M NaOH by writing NaOH in the blank. Indicate which compound(s) you expect to be soluble in 3M HCl by writing HCl under the compound. If you predict the compound to be insoluble both acid and base, write N in the blank.



2. If you used 1.0 g of the extraction mixture, how many moles of benzoic acid are present? Is 2 mL of 10% NaOH enough to neutralize the benzoic acid contained in 1.0 g of the mixture? A 10% sodium hydroxide solution has 1 gram solute in 9 mL of solvent. Show your calculations.

Use the acid and base Tables 1 and 2 to answer questions 3 and 4.

3. Which is a stronger acid phenol or ethanol? Draw the structure of the conjugate base of each compound and circle the stronger conjugate base.

4. Would you predict the base, ethylamine, to undergo a proton transfer (acid/base) reaction with phenol or ethanol in the question above? Write an equation for any reaction you predict.

D. DISCUSSION

Could you use the acid/base extraction method in this experiment to separate a mixture of cholesterol and bilirubin? Assume functional groups in cholesterol and bilirubin would have pKa's similar to simpler compounds in Table 1 and 2. Explain your reply.