Acid/Base Chemistry

Name: _____

Technique____/5 Report____/50 Total _____/55 Student ID:_____

I) Statement of Purpose: (5 pts) Provide a brief description of what is intended from this project.

II) Reaction Schemes:(10 pts) Draw a flowchart (like in the course pack) to illustrate the separation scheme. Use the structure that you think is your neutral compound.

III) Experimental: (10 pts) Provide a succinct description of the procedure used to separate the compounds. Use the Urea lab experimental as a guide for format, and use the description (given in the coursepack) that you followed as a guide for content. It should be brief but complete and include amounts **exactly as you did it, not how you were supposed to do it.**

IV) Observations: (5 pts) provide any relevant observations made during the experiment.

V) Results:

A) The solid recovered from making the acid extract basic:

MP: (1 pt)
Structure: (2 pts)

B) Solid recovered from making the base extract acidic:

MP: (1 pt)
Structure: (2 pts)

C) Solid unknown recovered from the original organic solution after all the washes:

MP: (1 pt)
Structure: (2 pts)

Mixed MP (with authentic sample): (1 pt)

V) Questions

A) (2 pts) Calculate the Keq for the reaction of 1 M aqueous HCl with ammonia?

B) (3 pts) The melting point of the base soluble molecule recovered from your mixture was not what is should have been for aspirin. What happened? What experiment would you conduct to verify your conclusion?

C) (3 pts) A solution of benzyl alcohol ($PhCH_2OH$) in diethyl ether is washed with 1 M aqueous NaOH, then 1 M aqueous HCl. Within error, all the benzyl alcohol remains in the diethyl ether, even though our approximations for calculating Keq in each acid/base reaction should be close to 1. Why isn't the alcohol extracted into the aqueous solutions?

D) (2 pts) Why did you recrystallize the unknown compound after the extraction?