Resolution of Phenylsuccinic Acid

Name_____

SID_____

Technique____/5 Report ____/50 Total _____/55

Section I: Introduction

Statement of purpose (3 pts). Write a concise statement outlining the purpose of the experiment.

Reaction Scheme (5 pts). Draw a series of equations that describe the reactions you performed.

Section II: Experimental

(8 pts). Write a brief experimental procedure detailing what you did (not necessarily what you were supposed to do).

Observations (5 pts). Record any observations or difficulties encountered during the procedure.

Section III: Analysis

Optical Rotation (6 pts).

The observed rotation when _____ g of (+)-phenysuccinic acid was dissolved in _____ ml acetone: ____ °

The observed rotation when _____ g of (+)-phenysuccinic acid was dissolved in _____ ml acetone: ____ °

Calculations (8 pts).

Calculate the concentration specific rotation of (+)-phenysuccinic acid:

Calculate the % optical purity of the (+)-phenysuccinic acid you isolated:

Calculate the concentration specific rotation of (-)-phenysuccinic acid:

Calculate the % optical purity of the (+)-phenysuccinic acid you isolated:

Questions (5 pts each):

1) What affect would the presence of residual water (from the recrystallization) have on the observed optical rotation of your sample?

2) Is the (-)-phenyl succinic acid that was used for the polarimetry more or less pure than the (+)-phenyl succinic acid? Why?

3) Calculate the rotation you would observe for a solution of (+)-phenysuccinic acid if you had dissolved 0.2 g in 10 mL of acetone, assuming a 20 cm tube length.