Organic Chemistry CH 352-01 (Wilson)

Quiz #4

April 4, 1997

(6) 1. Fill in the major products of two of the following three reactions. If none are indicated, the first two problems will be graded.

a. \[
\begin{align*}
\text{CO}_2\text{H} & \quad 1) \text{SO}_2\text{Cl}, \text{CH}_2\text{Cl}_2 \\
& \quad 2) \text{H}_2\text{NPh} \\
& \quad 3) \text{LAH}, \text{EtOH}
\end{align*}
\]

b. \[
\begin{align*}
\text{NH}_2 & \quad 1) 3 \text{ eq CH}_3\text{I}, \text{THF} \\
& \quad 2) \text{Ag}_2\text{O}, \text{H}_2\text{O} \\
& \quad 3) \Delta
\end{align*}
\]

c. \[
\begin{align*}
\text{CO}_2\text{H} & \quad 1) \text{Cl} \quad \text{O} \quad \text{Cl}, \text{CH}_2\text{Cl}_2 \\
& \quad 2) \text{AlCl}_3, \text{CCl}_4
\end{align*}
\]

(9) 2. Give the mechanism of the following transformation. Be sure to include all intermediates and resonance structures. Indicate the flow of electrons using arrow pushing.

\[
\begin{align*}
\text{NH} & \quad \text{NaNO}_2, \text{HCl (aq.)} \\
& \quad \text{cool, dilute}
\end{align*}
\]
3. Choose one of the following two compounds to synthesize. Choose only one. Your legal starting materials include benzene, toluene, monofunctional compounds of four carbons or less, and any inorganic reagent or solvent required to carry out your transformations. Any nitrogen containing compound must obtain the nitrogen from an inorganic source, for example: NH₃; NaN₃; NaCN; HNO₃; etc.