Chem 51A Quiz 6 (10 points; 10 minutes) December 1, 2008

Academic Honesty Policy. Academic honesty is strictly enforced on quizzes, exams, and other aspects of this course. Academic dishonesty will result in a failing grade in the class and a letter in the student's file. Activities constituting academic dishonesty include:

Cheating
- Copying from others during an examination.
- Communicating exam answers with other students during an examination.
- Offering another person's work as one's own.
- Taking an examination for another student or having someone take an examination for oneself.
- Tampering with an examination after it has been corrected, then returning it for more credit.
- Using unauthorized materials, prepared answers, written notes, or concealed information during an examination.

Dishonest Conduct
- Stealing or attempting to steal an examination or answer key from the instructor.
- Allowing another student to copy off of one's own work during a test.

Collusion
- Any student who knowingly or intentionally helps another student perform any of the above acts is subject to discipline for academic dishonesty.

I understand and will abide by this academic honesty policy: ________________________________ (signature)

1. Write the missing reactants or products in the boxes. If NO REACTION OCCURS, write NR. (4 pts)

\[
\begin{align*}
\text{Cl} & \quad \text{D} & \quad \text{Br} & \quad \text{Cl} \\
\text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H}
\end{align*}
\]

\[
\begin{align*}
\text{NaSCH}_2 & \quad \text{CH}_3OH & \quad \text{SCH}_3 & \quad \text{D} & \quad \text{H} \\
\text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H} & \quad \text{H}
\end{align*}
\]

\[
\begin{align*}
\text{H} & \quad \text{I} & \quad \text{H} & \quad \text{H}
\end{align*}
\]

2. Draw the products and indicate the stereochemistry of the products. (Smith 7.64a, 2 pts).

\[
\begin{align*}
\text{CH}_3\text{CH}_2 & \quad \text{Br} & \quad \text{C} & \quad \text{CH}_3 \\
\text{C}_6\text{H}_5\text{O} & \quad \text{H}_2\text{O} & \quad \text{H}_2\text{O}
\end{align*}
\]

\[
\begin{align*}
\text{C}_6\text{H}_{10} & \quad \text{O} & \quad \text{H}_2\text{O} & \quad \text{O} & \quad \text{H}_2\text{O} \\
\text{C}_6\text{H}_{10} & \quad \text{O} & \quad \text{H}_2\text{O} & \quad \text{O} & \quad \text{H}_2\text{O}
\end{align*}
\]

3. When a single compound contains both a nucleophile and a leaving group, an intramolecular reaction may occur. With this in mind, draw the product. (Smith 7.70a, 2 pts).

\[
\begin{align*}
\text{Na}^+ & \quad \text{O} & \quad \text{Br} & \quad \text{O}
\end{align*}
\]

\[
\begin{align*}
\text{C}_6\text{H}_{10} & \quad \text{O} & \quad \text{Br} & \quad \text{O}
\end{align*}
\]

4. Write a mechanism for the Arbusov reaction using curved-arrow notation. (HINTS: 2 steps. P is below N in the periodic table. 2 pts)

\[
\begin{align*}
P & \quad \text{OCH}_3 & \quad \text{H}_3\text{C} & \quad \text{H}_3\text{C} \\
\text{H}_3\text{C} & \quad \text{P} & \quad \text{OCH}_3 & \quad \text{H}_3\text{C} & \quad \text{H}_3\text{C} \\
\text{P} & \quad \text{OCH}_3 & \quad \text{H}_3\text{C} & \quad \text{H}_3\text{C} & \quad \text{H}_3\text{C}
\end{align*}
\]