Chem 51A Quiz 6 (10 points; 10 minutes) November 30, 2009

**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) Seat: ______

1. (Smith 7.56a and 7.62c, 4 pts)
   a. Rank the following in order of increasing $S_N2$ reactivity: $c < q < b$

   ![Chemical structures](image)

   b. Rank the following in order of increasing $S_N1$ reactivity: $q < b < c$

   ![Chemical structures](image)

2. Draw the product this $S_N2$ reaction and indicate the stereochemistry. (Smith 7.58c, 2 pts)

   ![Chemical reaction](image)

3. Write a curved-arrow mechanism for the solvolysis of 2-chloro-2-(p-methylphenyl)propane in aqueous acetone to form 2-(p-methylphenyl)-2-propanol. (Hint: The reaction involves water.) (3 pts)

   ![Chemical reaction](image)

4. Propose a short synthesis of the following compound, beginning only with compounds containing five carbon atoms or fewer and any organic or inorganic reagents that you require. (1 pt)

   ![Chemical reaction](image)