Chem 51A Quiz 4 (10 points; 10 minutes) November 16, 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. Consider the stereoisomers of 2,3,4-pentanetriol. (5 pts)
   ![Stereoisomers of 2,3,4-pentanetriol](image)

   - 8 possibilities but only 4 stereoisomers

   a. Draw the two meso stereoisomers of 2,3,4-pentanetriol:

   ![Meso stereoisomers](image)

   b. Draw the two chiral stereoisomers of 2,3,4-pentanetriol that constitute a pair of enantiomers:

   ![Chiral stereoisomers](image)

   c. Are there any other stereoisomers of 2,3,4-pentanetriol? **No** If so, please draw them below:

2. Draw the structure for (3S,6S)-6-isopropyl-3-methyldecane. (Smith, 5.44d, 3 pts)

![Structure](image)

3. The specific rotation [α] of pure quinine, an antimalarial drug, is -165°. (Smith 5.60ce, 2 pts)

   a. What is the specific rotation [α] for the enantiomer of quinine? **+165°**

   b. What is the specific rotation [α] for a solution containing 80% quinine and 20% of its enantiomer? **-99°**

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80\% - 20\% = 60\% e.e \quad 0.6 \times (-165) = -99
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