

Organic Chemistry II Exam 2

Name:

Signature:

Recitation Instructor:

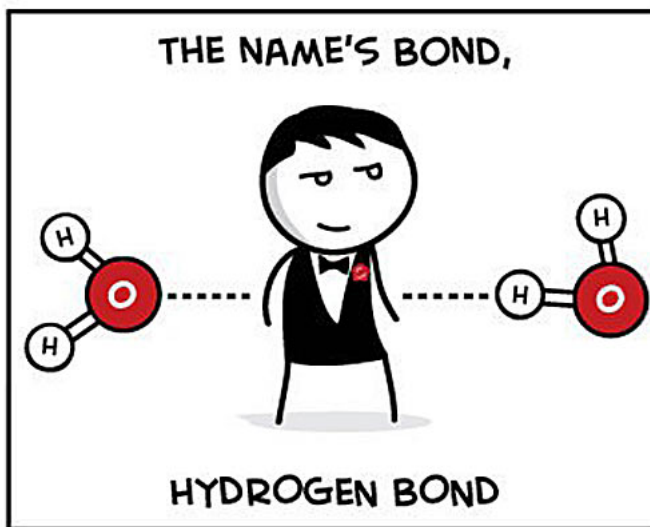
Instructions. There are 6 sets of questions. The first thing you should do is make sure all of the questions are here, and if not, notify a proctor immediate.

You have 1 hr and 15 minutes to complete the exam. Use your time wisely.

Write your answers in the allotted space. If you need to use the back of the paper, make note of it in the space provided for credit.

Good luck!

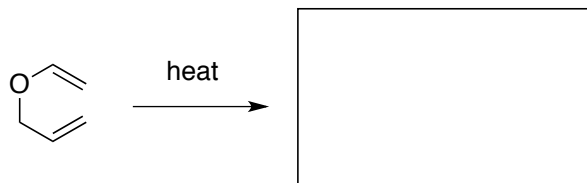
1. ___ (15 points)
 2. ___ (15 points)
 3. ___ (20 points)
 4. ___ (20 points)
 5. ___ (20 points)
 6. ___ (20 points)
- T. ___ (100 points)



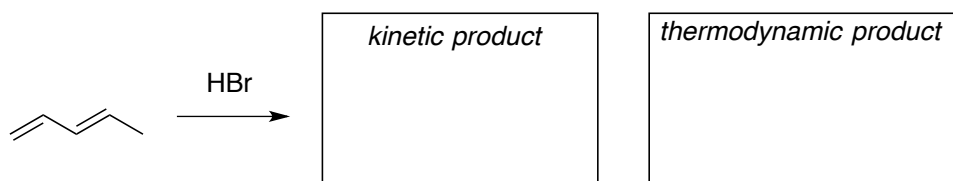
1. Reactions (15 points).

For the following reactions circle the appropriate catalysts or reagents that would most likely carry out the reaction shown (2 points each).

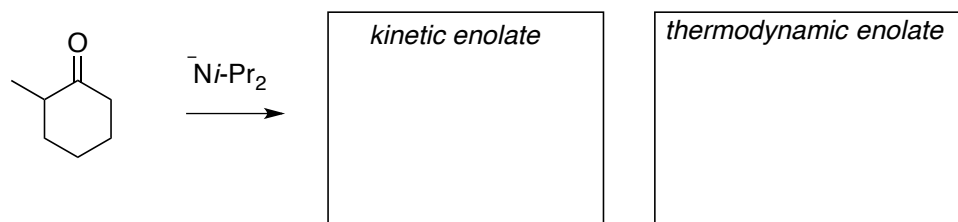
a. (3 points)



b. (6 points)



c. (6 points)



2. Aromaticity (15 points, 3 points each)

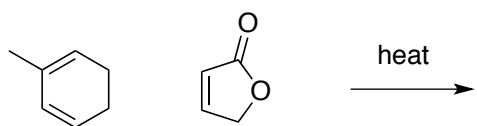
For the following molecules, put a **circle** around the molecules that are **aromatic**, put a **square** around the molecules that are **anti-aromatic**, and leave any molecule that is neither uncircled.



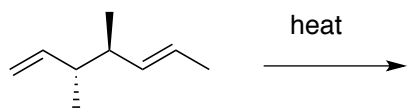
3. Regio and Stereochemistry (20 points, 10 points each)

Predict the products of the following reactions, making sure to address both regio and stereochemical control when appropriate

3a.

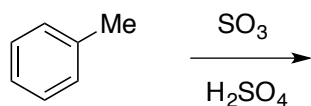


3b.

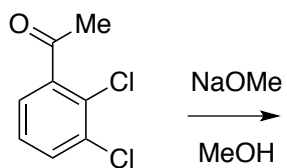


4 Aromatic Chemistry Regiochemistry and Mechanisms (20 points, 10 points each). Predict the correct regiochemistry of the following reaction, using a mechanism and relevant intermediate structures to explain your answer.

4a.

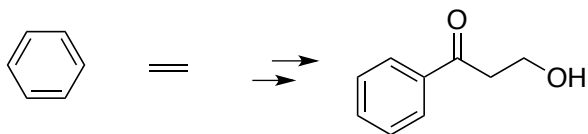


4b.



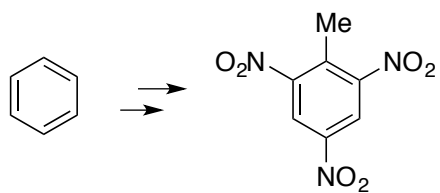
5. Synthesis (20 points)

5a (10 points)



*only C-based
starting materials*

5b (10 points)



2,4,6-trinitrotoluene (TNT)

6. Mechanism Semi-Challenge (10 points)

The following is a reaction cascade that is called an 'aza-Cope/Mannich Reaction' that combines a sigmatropic rearrangement (ie Cope/Claisen) with enol chemistry. Use mechanism arrows to show this mechanism

