

Organic Chemistry II Exam 2

Name:

Signature:

Recitation Instructor:

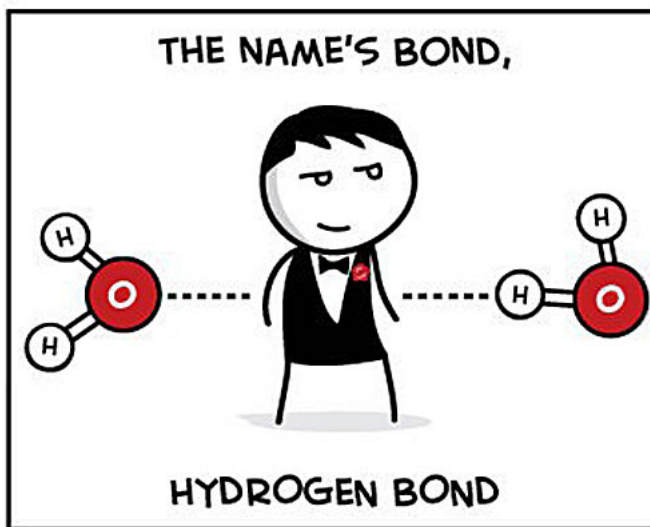
Instructions. There are 6 sets of questions. The first thing you should do is make sure all of the questions are here, and if not, notify a proctor immediate.

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.

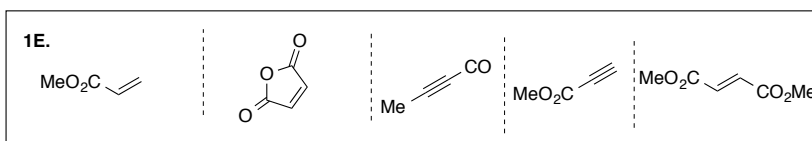
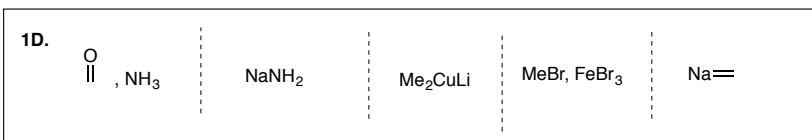
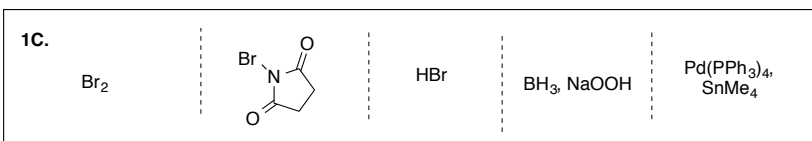
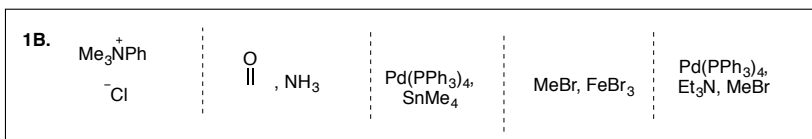
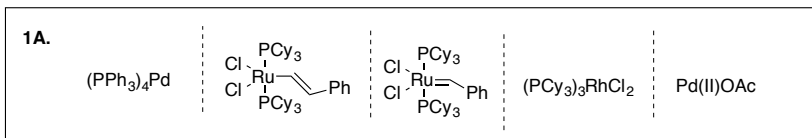
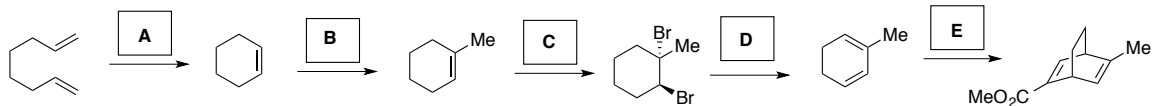
Good luck!

1. ___ (10 points)
 2. ___ (15 points)
 3. ___ (20 points)
 4. ___ (20 points)
 5. ___ (20 points)
 6. ___ (15 points)
- T. ___ (100 points)



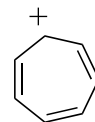
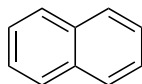
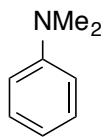
1. Reactions (10 points, 2 points each).

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



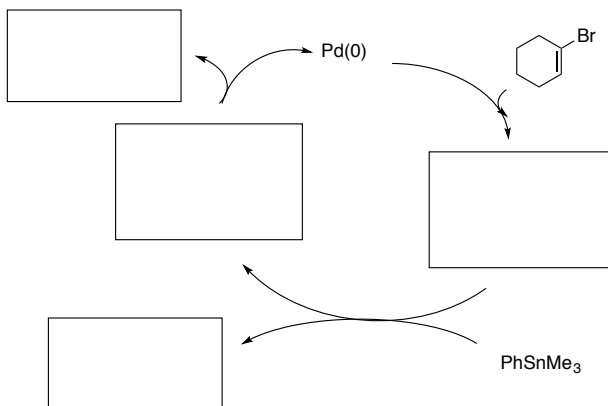
2. Aromaticity (15 points, 3 points each)

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.

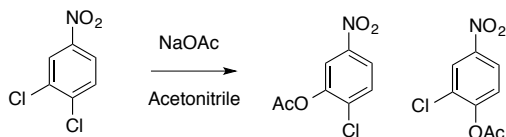


3. Mechanism (20 points, 10 points each)

3a. Show the missing intermediates of the following reaction.

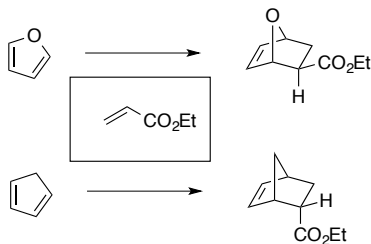


3b. The following reaction leads exclusively to one of the two products shown. Circle the major product and provide a mechanism that explains your answer.

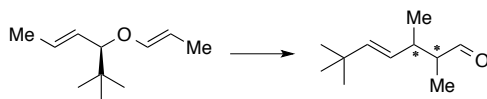


4. Stereochemistry (20 points, 10 points each)

4a. The following Diels-Alder reactions lead to different stereochemical outcomes. Using what we learned recently, concisely explain this difference in major product formation.



4b. For the following Claisen rearrangement, provide the expected stereochemical outcome and explain your answer using the appropriate chair transition state.

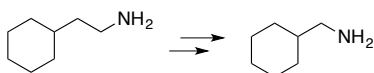


5. Synthesis (20 points)

5a (10 points)

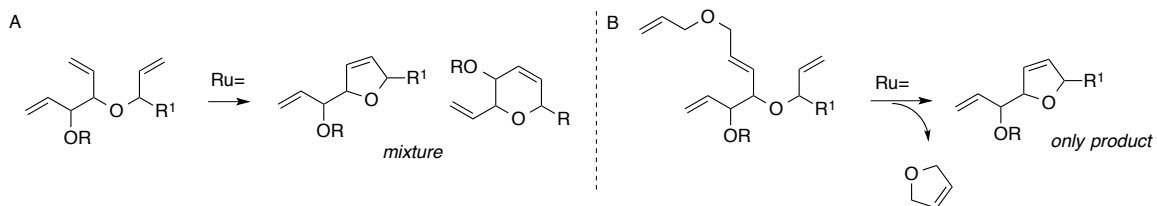


5b (10 points)



6. Metathesis Cascade Mechanism (15 points)

A. Show mechanisms that explains the formation of the both products in reaction A in a relatively non-selective process.



B. Show a mechanism for B that accounts for the selective nature of the reaction.