

Organic Chemistry II Exam 1

Name:

Signature:

Recitation Instructor:

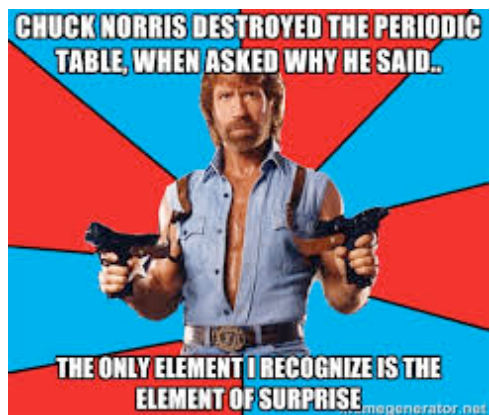
Instructions. There are 5 sets of questions. The first thing you should do is make sure all of the questions are here, and if not, notify a proctor immediate.

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.

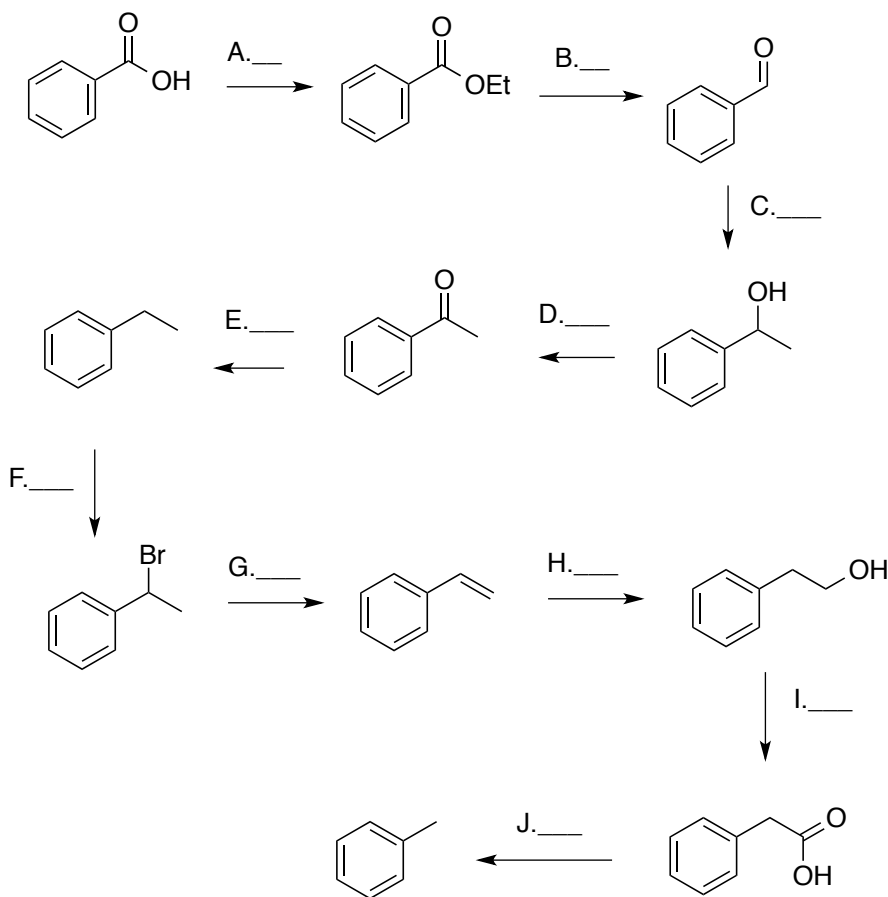
Good luck!

1. ____ (20 points)
 2. ____ (20 points)
 3. ____ (30 points)
 4. ____ (10 points)
 5. ____ (20 points)
- T. ____ (100 points)



1. Reactions-Pick Reagents (20 points, 2 points each).

For the following reactions, write number of the appropriate reactants/reagents in the space provided (2 points each).



1. LiAlH_4
2. NaBH_4
3. O_3 , DMS
4. DIBAL-H

5. PCC
6. H_2CrO_4
7. H_2SO_4 , H_2O
8. H_3PO_4 , Δ

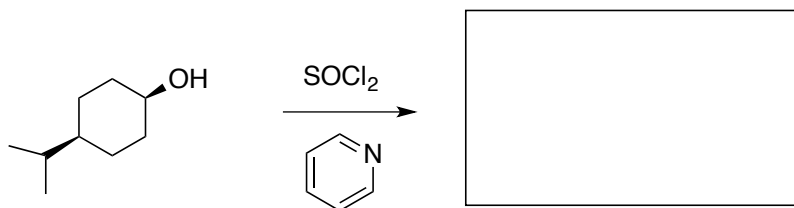
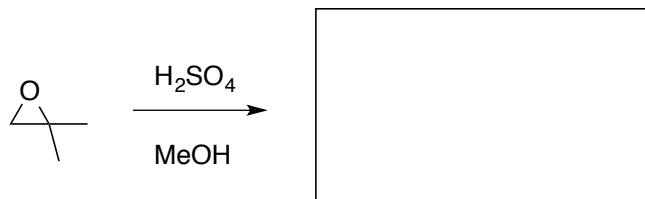
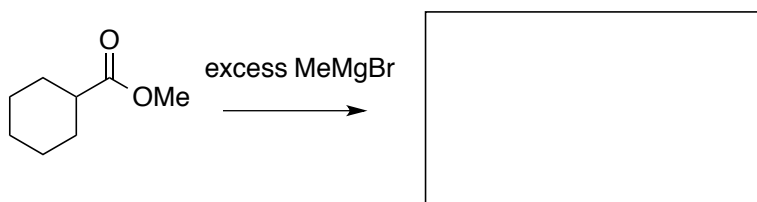
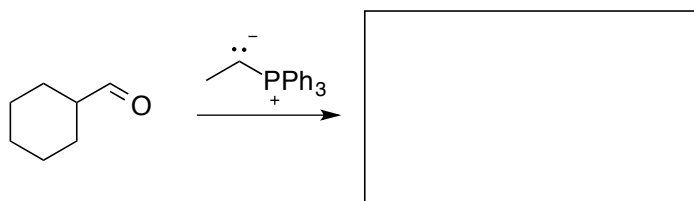
9. CH_2N_2
10. Br_2 , light
11. H_2NNH_2 , NaOH , Δ
12. HCl

13. NaNH_2
14. LiCN
15. NaH ; MeBr
16. H_2SO_4 , EtOH

17. BH_3 ; NaOOH
18. 250°C
19. Br_2 , H_2O
20. MeMgBr

2. Reactions- Draw Products. (20 points, 5 points each).

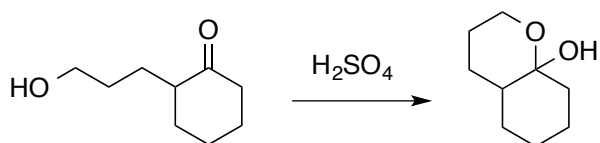
Draw the appropriate product one would expect for the following reactions. Assume there is an aqueous workup at the end of each reaction



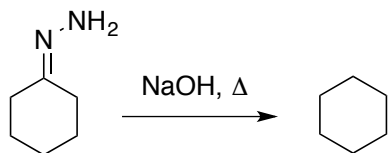
3. Mechanisms (30 points, 10 points each)

Draw a reaction mechanism for the following transformations.

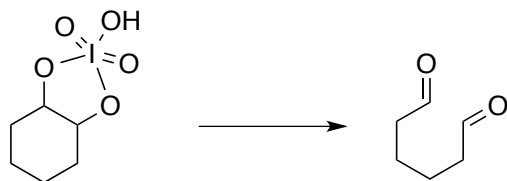
A.



B.

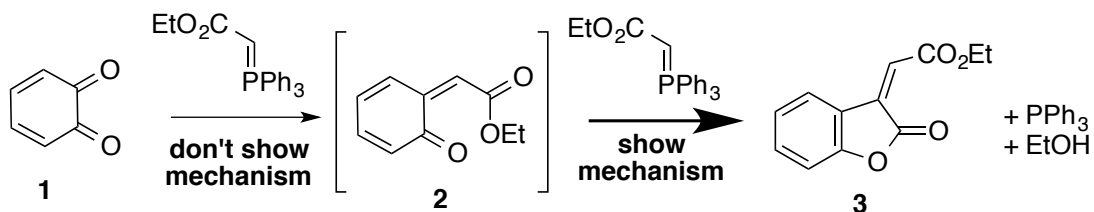
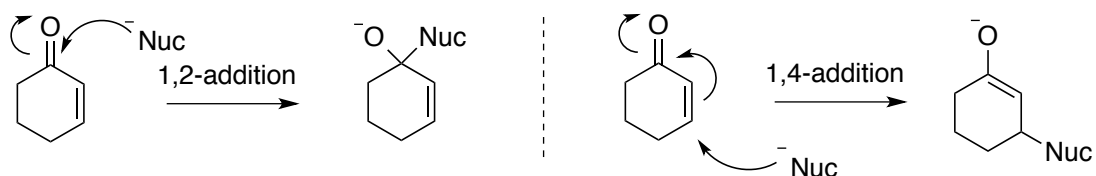


C.



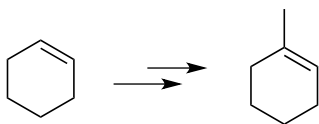
4. Mechanism Challenge (10 points)

We have seen carbonyls react with nucleophiles in a 1,2 addition (below left). We will soon learn that carbonyls in conjugation with alkenes can react at the alkene through a 1,4-addition (below right). Using this new knowledge/mechanism, along with mechanisms you should be familiar with, predict a mechanism that explains how **2** to can be converted to **3** with a Wittig reagent. Note that the byproduct of the reaction is PPh_3 and NOT OPPh_3 , as we normally see in Wittig reactions.



5. Synthesis (20 points, 10 points each)

A.



B.

