

SECOND HOUR EXAM - CHEMISTRY 3331

October 23, 2008

NAME: Answers

**Circle the Time of Your
Recitation**

PROBLEM 1. _____

Monday 8am

Monday noon

PROBLEM 2. _____

Monday 5pm

Tuesday 8 am

PROBLEM 3. _____

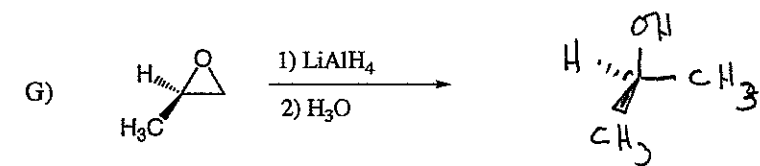
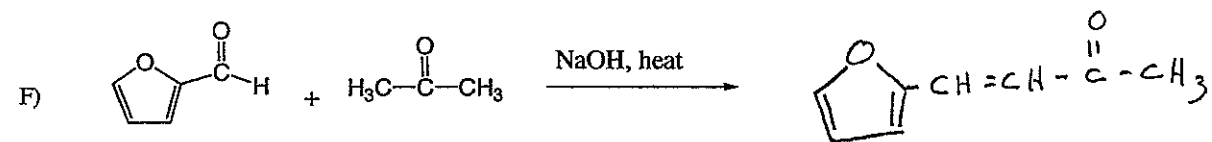
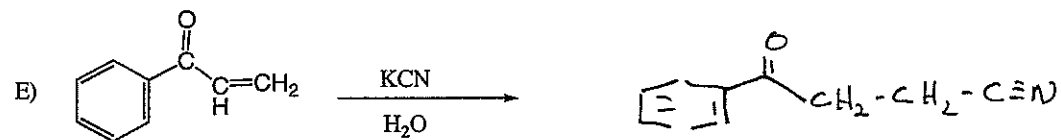
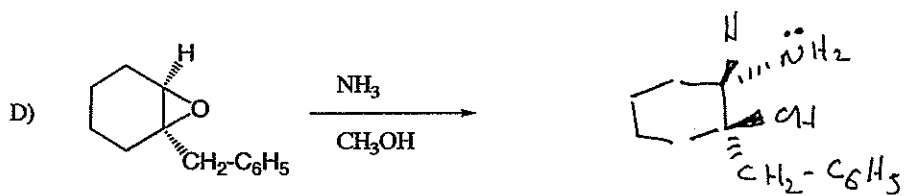
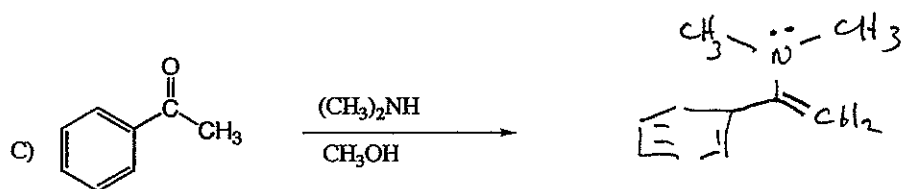
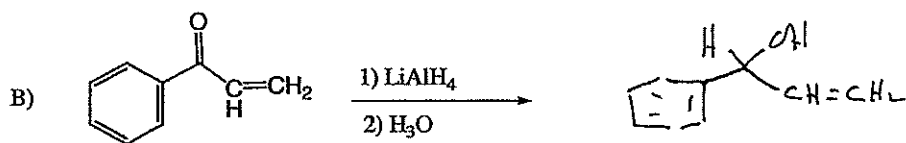
Wednesday 8 am

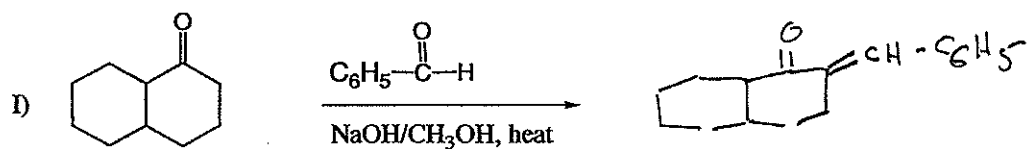
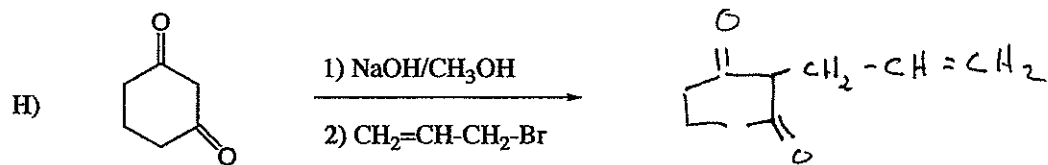
PROBLEM 4. _____

Wednesday 5pm

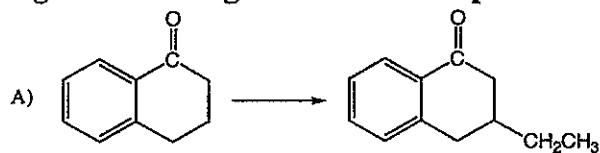
TOTAL: _____

Problem 1. (45 points) Given the **final** product for the following reactions. If not reaction occurs, state so. **Circle your answer.**

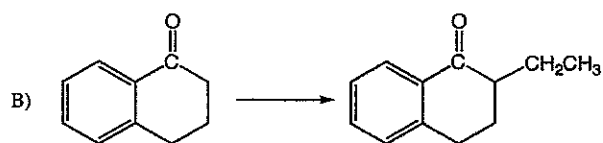




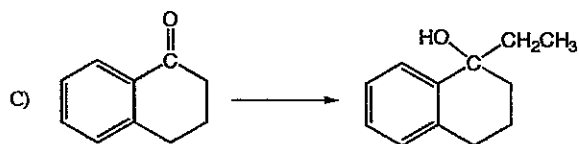
Problem 2. (30 points) What reagents would you use to carry out the following reactions. More than one step may be required. If more than one step is required, number each step. **Circle the reagents. Do not give intermediate products. Do not give the synthesis of the reagents.**



1. $\text{Br}_2 / \text{H}_3\text{O}^+$
2. $\text{t}^-\text{O}^- \text{K}^+$
3. $(\text{CH}_3\text{CH}_2)_2\text{CuLi}$

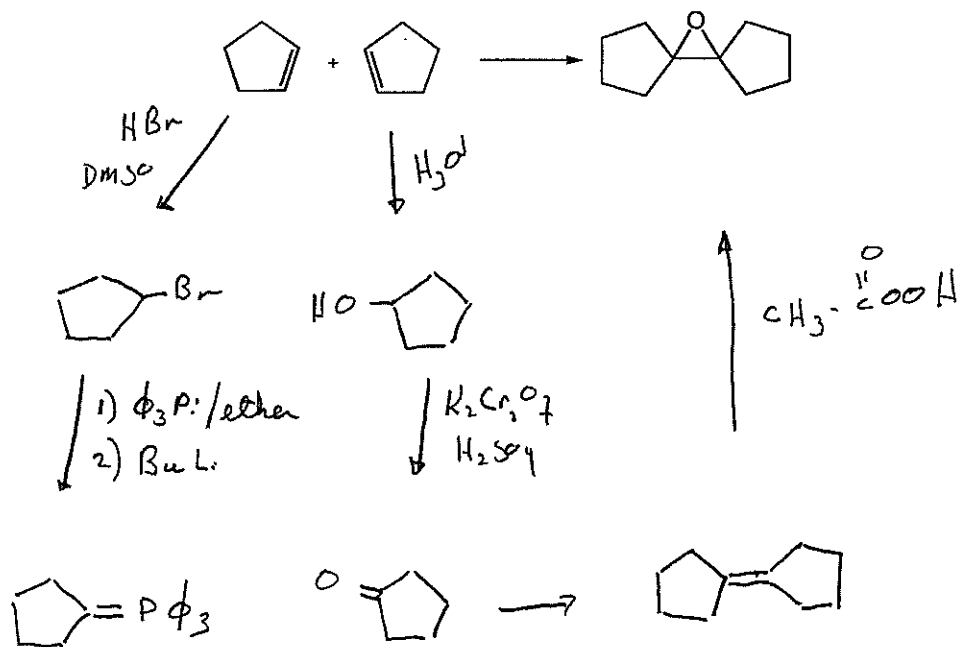


1. $\text{N}^+\text{L}^+ / \text{ether}$
2. $\text{CH}_3\text{CH}_2\text{Br}$



- 1) $\text{CH}_3\text{CH}_2^- \text{L}^+ / \text{ether}$
- 2) H_3O^+

Problem 3. (15 points) How would you carry out the following transformation? Do not use the Grignard or alkyl lithium reagents, or any free radical chemistry.



Problem 4. (10 points) What two molecules would you start with to carry out the synthesis of the following molecule using the Robinson annulation. Do not show the synthesis, just the two molecules.

