

Chemistry 334

Examination #3

November 22, 1999

Professor Charonnat

Name: \_\_\_\_\_

Be certain that your examination has five (5) pages including this one.

Put your name on **each** page of this examination booklet.

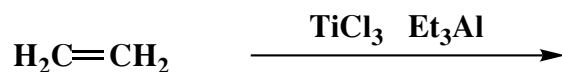
By putting your name on this examination booklet you agree to abide by California State University, Northridge policies of academic honesty and integrity.

Name: \_\_\_\_\_

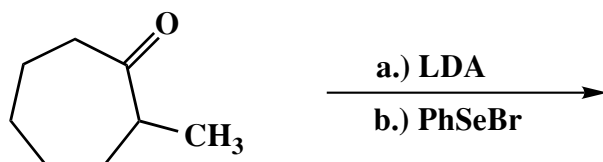
1. (25 points)

For each of the following five (5) questions, draw the structure of the expected major organic product. If relevant, explicitly specify absolute and/or relative stereochemistry.

A.

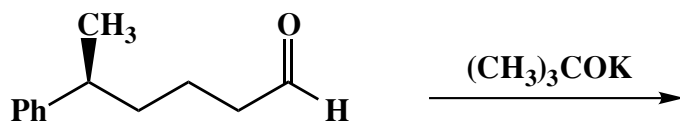


B.

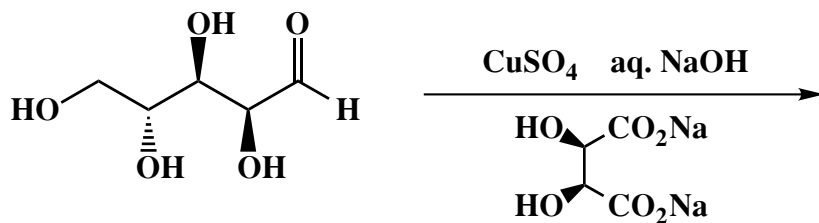


(racemic)

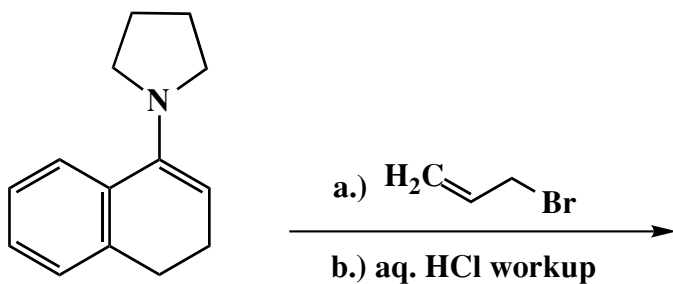
C.



D.



E.



Name: \_\_\_\_\_

2. (25 points)

For each of the following five (5) questions, draw the specific reagent(s) necessary to effect the transformation shown. If more than one reaction is involved in an answer, be certain to distinguish the individual steps clearly.

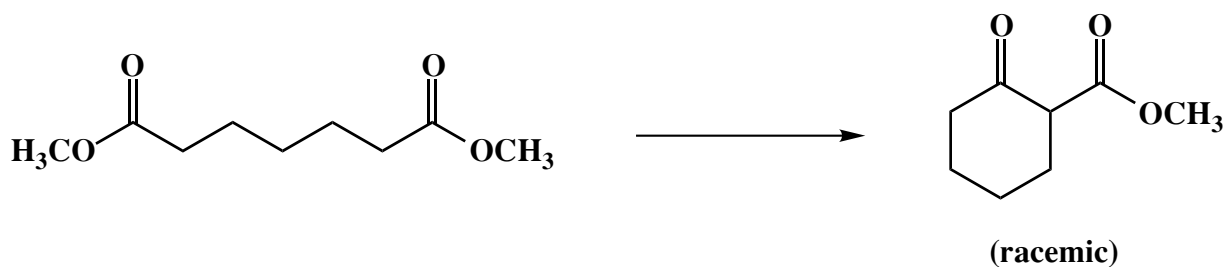
A.



B.



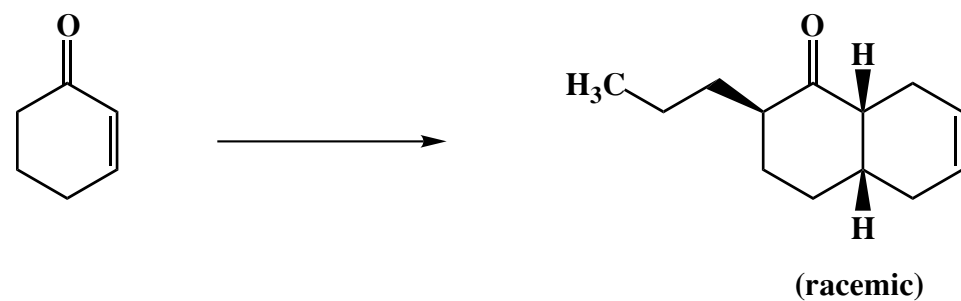
C.



D.



E.



Name: \_\_\_\_\_

3. (20 points)

For each of the following five (5) questions, circle the number that corresponds to the correct answer.

A. Dehydration of aldol products occurs via:

1. basic conditions only
2. acidic conditions only
3. basic or acidic conditions

B. Isobutylene can be polymerized by:

1. a cationic chain-growth mechanism
2. an anionic chain-growth mechanism
3. a cationic step-growth mechanism

C. The Claisen condensation requires:

1. a catalytic amount of base
2. one equivalent of base
3. two equivalents of base

D. D-Threose and D-erythrose are:

1. conformers
2. enantiomers
3. diastereomers

E. Methyl  $\beta$ -D-glucopyranoside is:

1. a reducing sugar
2. a nonreducing sugar
3. an oxidizing sugar

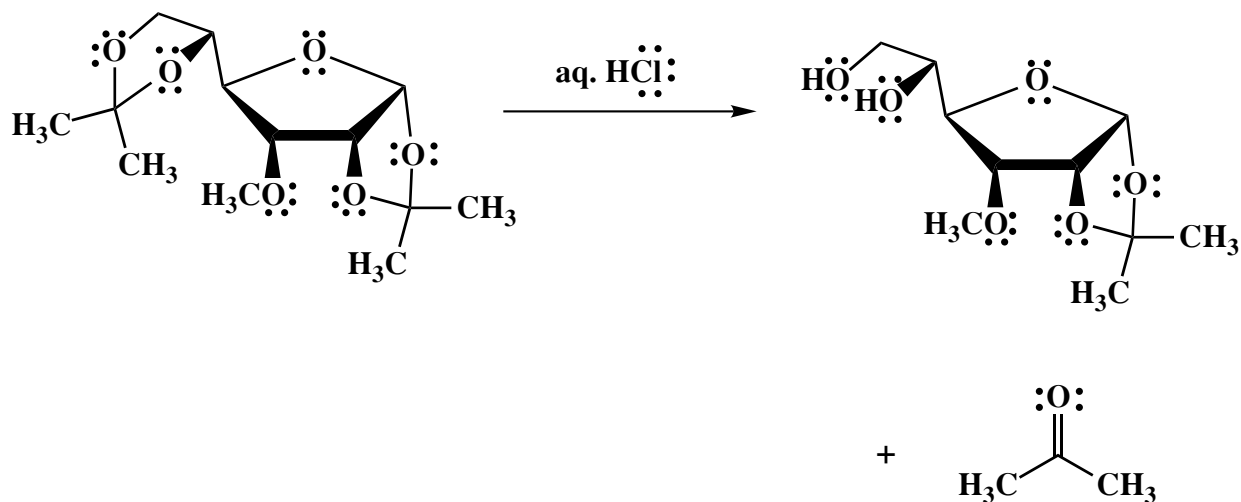
4. (10 points)

Are all the molecules in a sample of linear polyethylene identical? Explain your reasoning clearly.

Name: \_\_\_\_\_

5. (20 points)

Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. Show all intermediates and denote all lone pair electrons, formal charges and countercharges where appropriate.



**Congratulations!**

1	/25
2	/25
3	/20
4	/10
5	/20
<hr/> Total:	/100