

Chemistry 334

Examination #3

May 10, 2004

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.

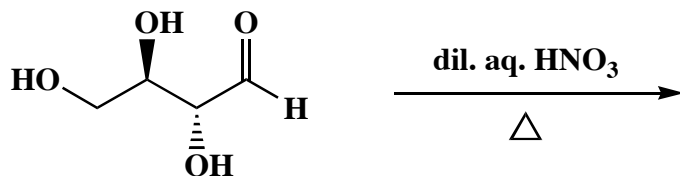
Molecular models are allowed for this examination. Calculators are unnecessary and are not allowed.

Name: _____

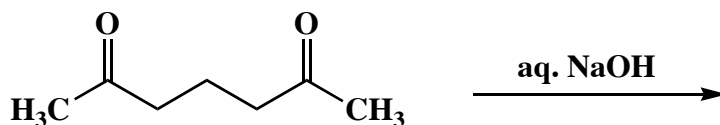
1. (25 points)

Draw the structure of the expected major organic product for each of the following five (5) questions. Clearly specify stereochemistry, if relevant.

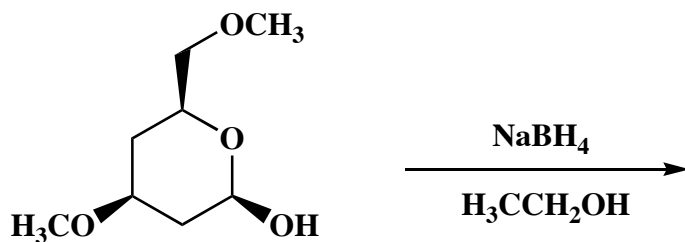
A.



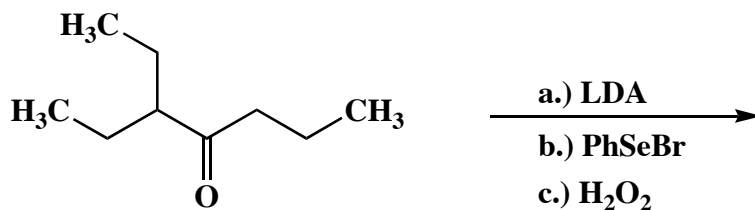
B.



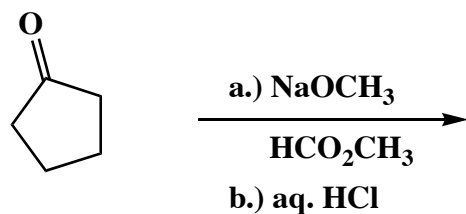
C.



D.



E.



Name: _____

2. (25 points)

Circle the number that corresponds to the correct answer for each of the following five (5) questions.

A. Aldol condensations require:

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

B. D-Glucose and D-mannose are:

1. enantiomers
2. diastereomers
3. structural isomers

C. Assuming equal numbers of monomer units, amylose and glycogen are:

1. enantiomers
2. diastereomers
3. structural isomers

D. Methyl acrylate ($\text{H}_2\text{C}=\text{CHCO}_2\text{CH}_3$) can be polymerized with:

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

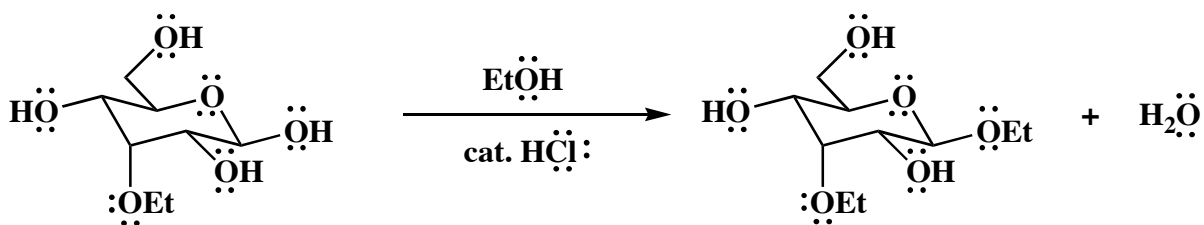
E. Polyethylene is:

1. a condensation copolymer
2. a condensation homopolymer
3. an addition homopolymer

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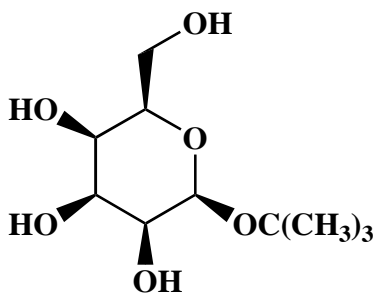
3. (20 points)

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.



4. (10 points)

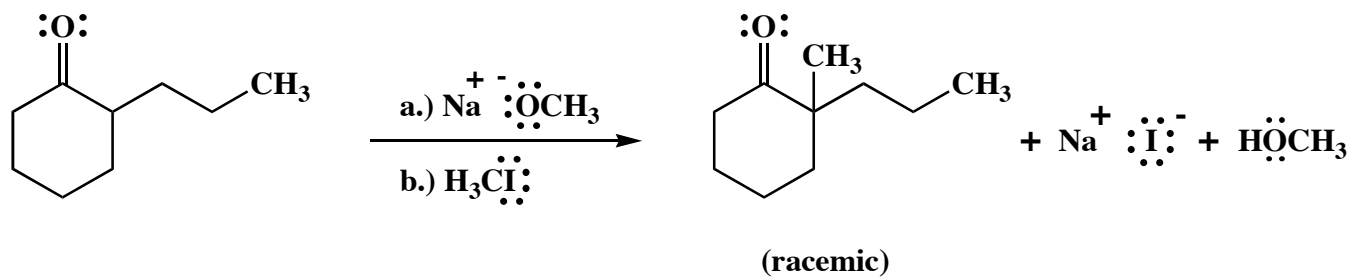
Draw the most stable conformation of the following glycoside. Clearly denote all 1,3-diaxial interactions.



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. Explain why a racemic mixture is obtained, and why the compound shown is the major product rather than a regioisomer.



Congratulations!

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