

Chemistry 334

Hour Examination #3

May 5, 2003

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.

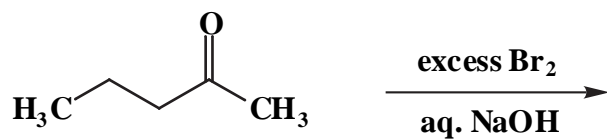
Molecular models are allowed for this examination. Calculators are unnecessary and are not allowed.

Name: _____

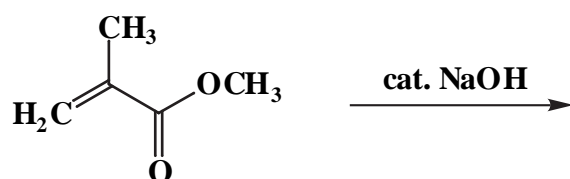
1. (25 points)

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

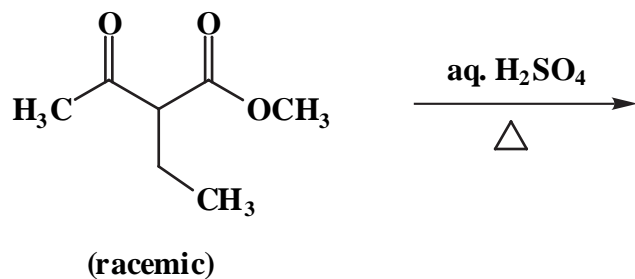
A.



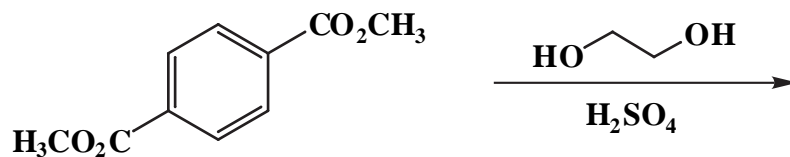
B.



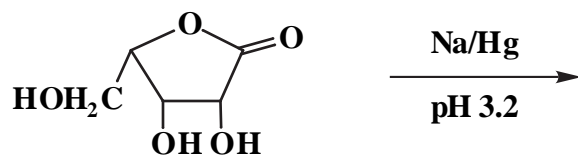
C.



D.



E.

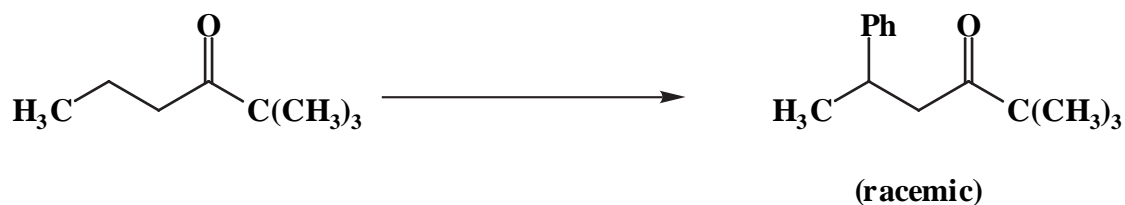


Name: _____

2. (25 points)

Draw the specific reagent(s) necessary to effect the transformation shown, for each of the following three (3) questions. If more than one reaction is involved in an answer, be certain to distinguish the individual steps clearly.

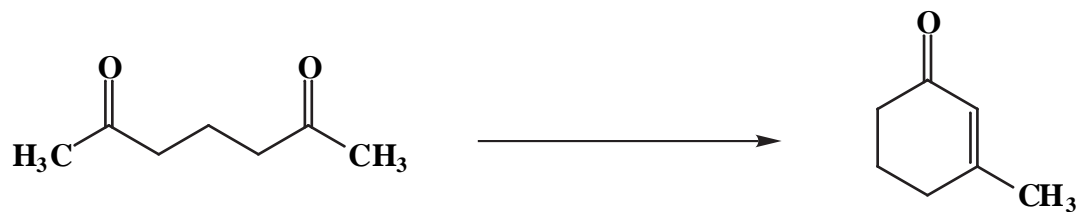
A.



B.



C.



Name: _____

3. (25 points)

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

A. Which step drives the Claisen condensation to completion?

1. formation of the initial ester enolate
2. loss of alkoxide anion
3. deprotonation of the β -ketoester

B. Which of the following compounds is not a reducing disaccharide?

1. maltose
2. sucrose
3. cellobiose

C. The term, "annulation," refers to:

1. heating a sample
2. substitution
3. ring formation

D. Which of the following conditions can be used to obtain stereochemical control in the polymerization of propene?

1. Ziegler-Natta conditions
2. radical conditions
3. cationic conditions

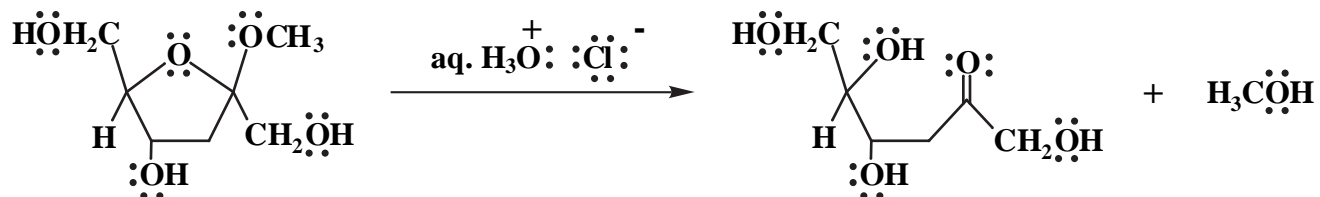
E. Base-mediated aldol condensation requires:

1. a catalytic amount of base
2. one mole of base
3. two moles of base

Name: _____

4. (25 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 unshared electrons, formal charges and countercharges where appropriate. Clearly designate reversibility or irreversibility for each primary mechanistic step.



Congratulations!

1	/25
2	/25
3	/25
4	/25
Total:	/100