

Chemistry 334

Hour Examination #3

November 26, 2002

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.

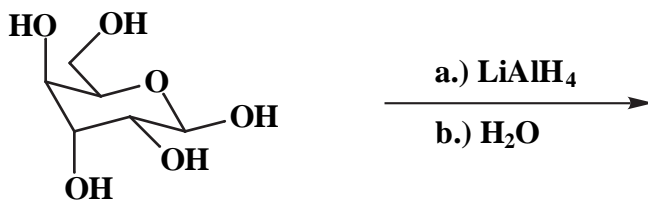
Molecular models are allowed for this examination. Calculators are unnecessary and are not allowed.

Name: _____

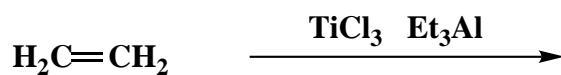
1. (25 points)

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

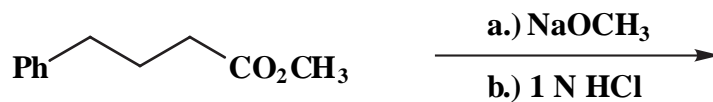
A.



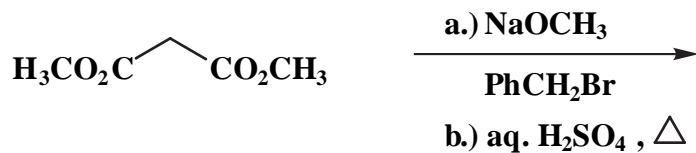
B.



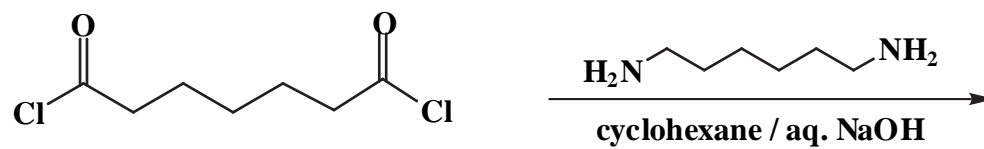
C.



D.



E.



Name: _____

2. (25 points)

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

A. The enol tautomer of cyclohexanone:

1. is more stable than the keto tautomer
2. is less stable than the keto tautomer
3. has the same stability as the keto tautomer

B. The alkene, 1-hexene, can be polymerized with:

1. acidic conditions
2. neutral conditions
3. basic conditions

C. Dieckmann condensation of a 1,7-diester affords a:

1. β -keto ester with a five-membered ring
2. β -keto ester with a six-membered ring
3. β -keto ester with a seven-membered ring

D. Maltose contains two D-glucose molecules linked together by:

1. an α -1,4'-glycosidic bond
2. a β -1,4'-glycosidic bond
3. an α -1,6'-glycosidic bond

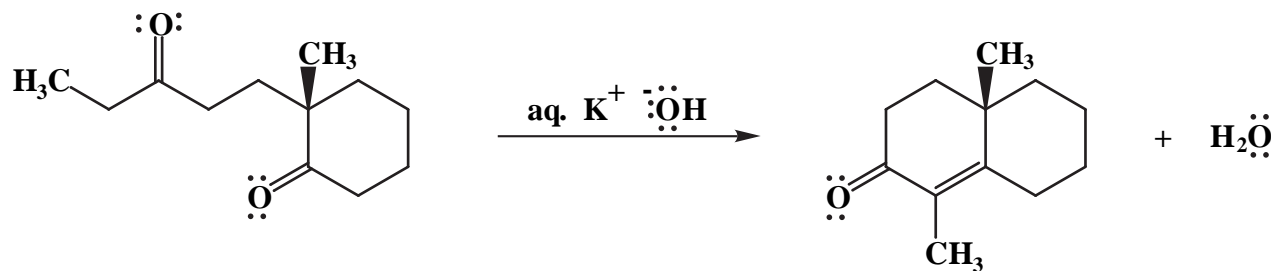
E. The carbohydrates, α -D-galactose and β -D-glucose are:

1. anomers
2. enantiomers
3. diastereomers

Name: _____

3. (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.



Name: _____

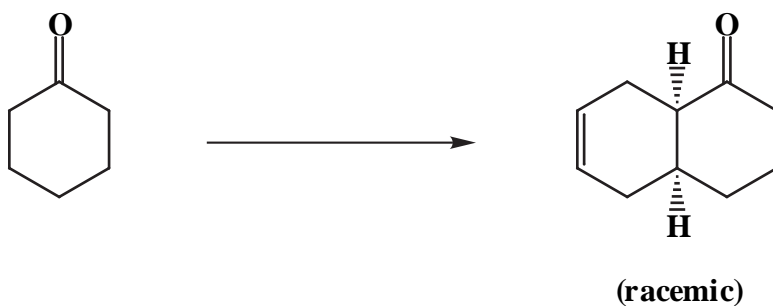
4. (25 points)

Draw the specific reagent(s) necessary to effect the transformation shown, for both of the following two (2) questions. If more than one reaction is involved in an answer, be certain to distinguish the individual steps clearly.

A.



B.



Congratulations! Happy Thanksgiving!

| | |
|--------|------|
| 1 | /25 |
| 2 | /25 |
| 3 | /25 |
| 4 | /25 |
| <hr/> | |
| Total: | /100 |