

Chemistry 334

Examination #1

September 29, 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.

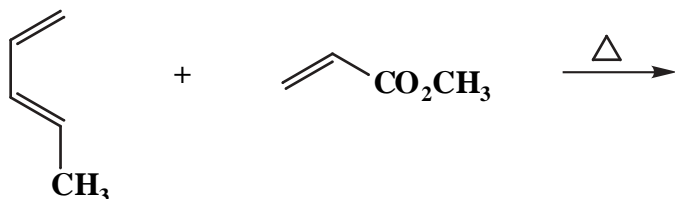
Molecular models are allowed for this examination. Calculators are unnecessary and are not allowed.

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.

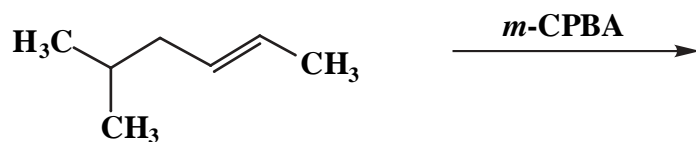
A.



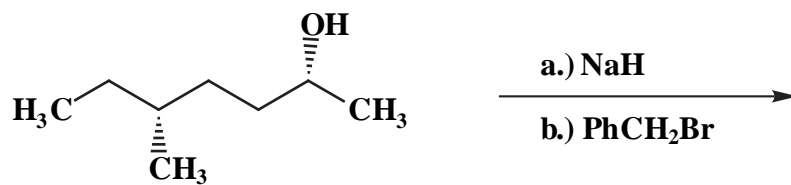
B.



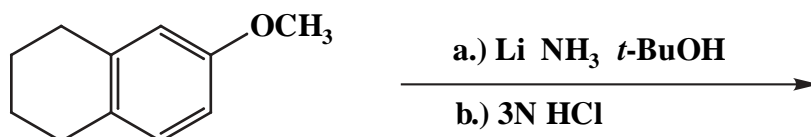
C.



D.



E.

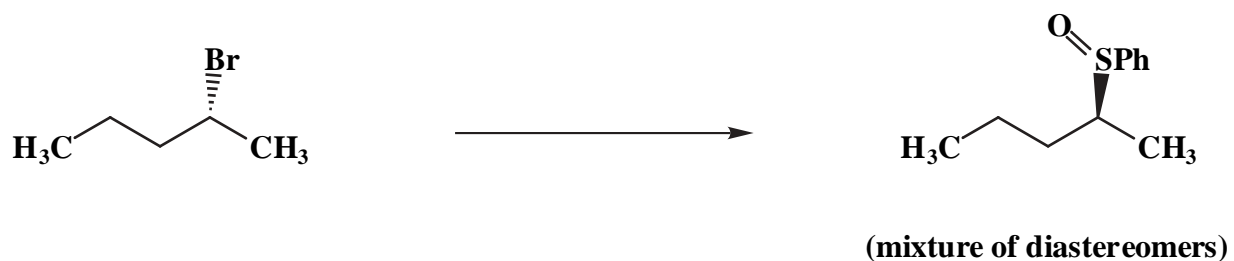


Name: _____

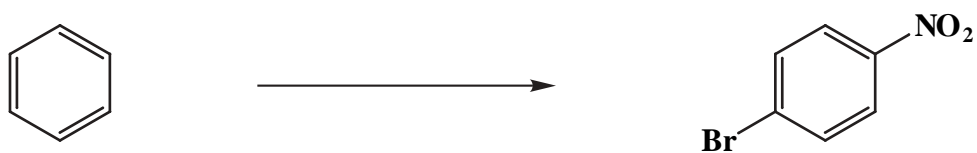
2. (30 points)

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.

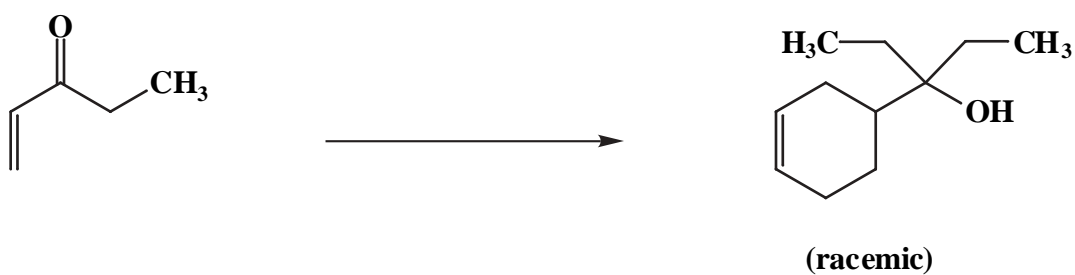
A.



B.



C.



Name: _____

3. (20 points)

Circle the number that corresponds to the correct answer for each of the following four (4) questions.

A. A thiol:

1. is less acidic than the corresponding alcohol
2. has the same acidity as the corresponding alcohol
3. is more acidic than the corresponding alcohol

B. The carbocation formed by heterolytic cleavage of the C-Br bond of *trans*-1-bromopent-2-ene has positive charge concentration at:

1. C1 and C2
2. C1 and C3
3. C1 and C4

C. Catalytic hydrogenation of a benzyl ether affords:

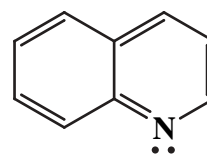
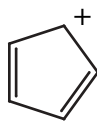
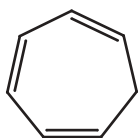
1. the corresponding alcohol and benzene
2. the corresponding alcohol and toluene
3. the corresponding alkane and benzyl alcohol

D. The ^{13}C NMR spectrum of 1,3,5-triethylbenzene contains:

1. two resonances in the aromatic region
2. three resonances in the aromatic region
3. six resonances in the aromatic region

4. (15 points)

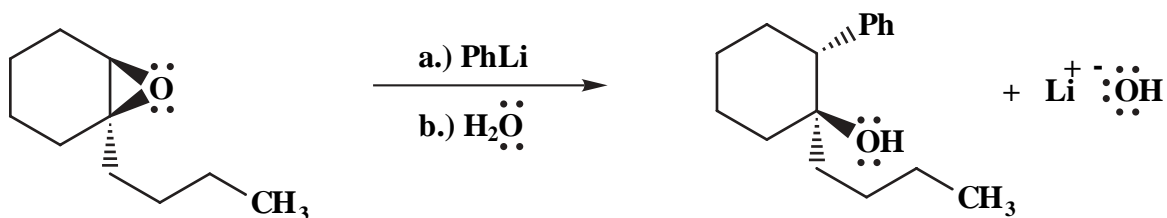
Classify each of the following three (3) species as aromatic, antiaromatic, or nonaromatic (neither aromatic nor antiaromatic).



Name: _____

5. (10 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	/30
3	/20
4	/15
5	/10
Total:	/100