

Chemistry 333

Examination #2

November 6, 2006

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.

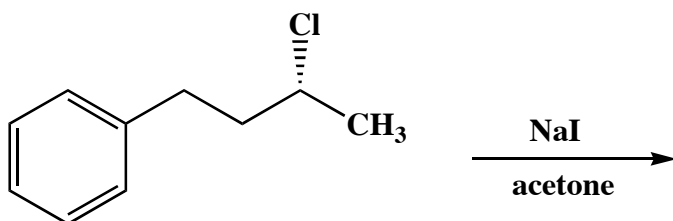
Molecular models are allowed for this examination. All electronic devices, including calculators, are unnecessary and are not allowed.

Name: _____

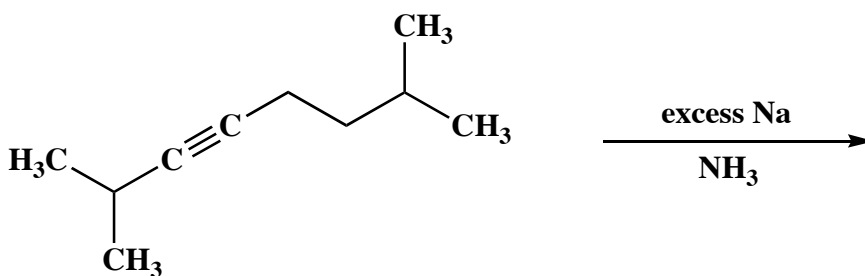
1. (20 points)

Draw the structure of the expected major organic product for each of the following four (4) questions. Clearly specify stereochemistry, if relevant.

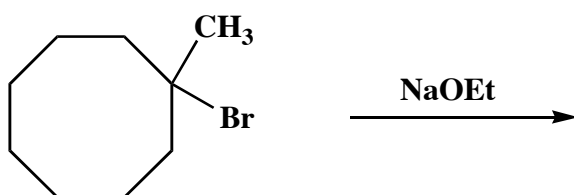
A.



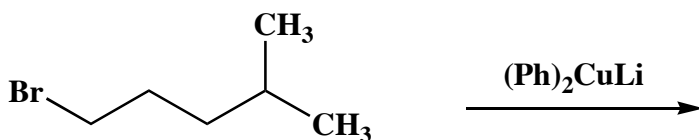
B.



C.



D.



Name: _____

2. (25 points)

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

A. Primary kinetic isotope effects are observed in

1. E1 reactions
2. E2 reactions
3. S_N2 reactions

B. Which of the following alkyl halides is the most reactive in S_N2 reactions?

1. 1-fluorobutane
2. 1-chlorobutane
3. 1-bromobutane

C. Which of the following alkyl halides is the most reactive in E2 eliminations?

1. 2-bromobutane
2. 1-bromobutane
3. 2-bromo-2-methylbutane

D. Which event occurs first in an E1cB reaction?

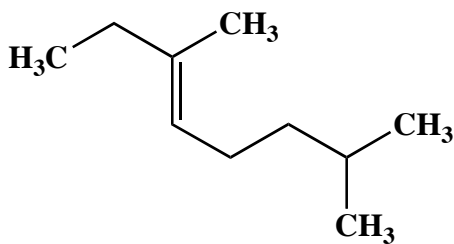
1. protonation
2. deprotonation
3. departure of the leaving group

E. Which of the following compounds is achiral?

1. (2*R*,3*S*)-2,3-dibromobutane
2. (2*R*,3*R*)-2,3-dibromobutane
3. (2*S*,3*S*)-2,3-dibromobutane

3. (10 points)

Use IUPAC nomenclature to write the systematic name for the following alkene.

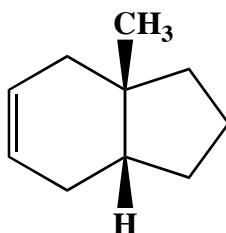
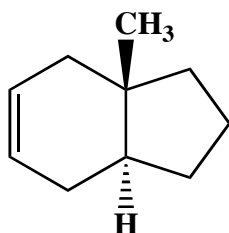


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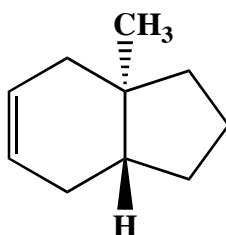
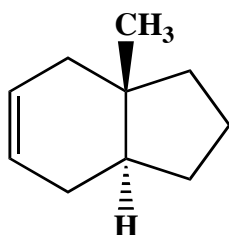
4. (25 points)

State the relationship between each of the following five (5) pairs of structures (identical, enantiomers, diastereomers, structural isomers, conformational isomers, different compounds that are not isomeric).

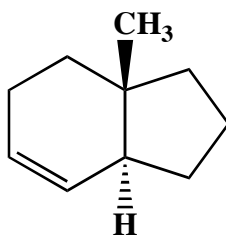
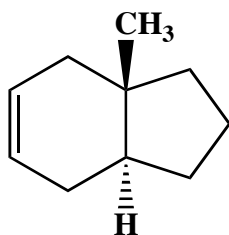
A.



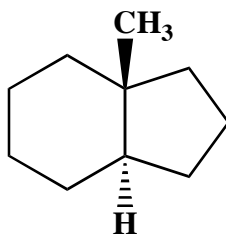
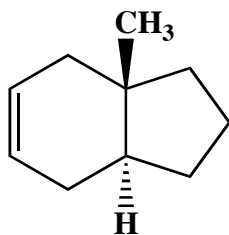
B.



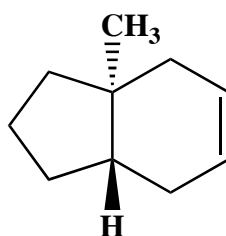
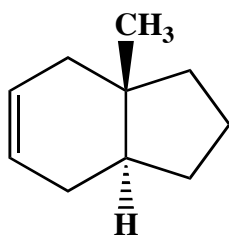
C.



D.



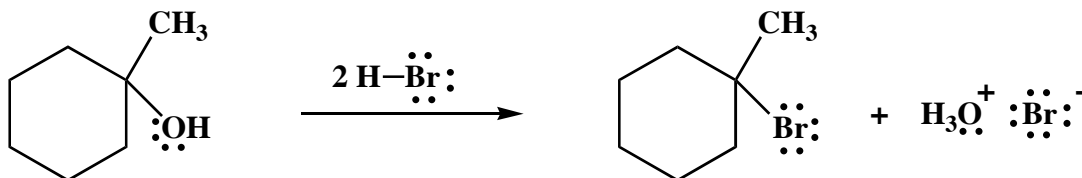
E.



Name: _____

5. (20 points)

Draw the mechanism of the following reaction, using the curved-arrow notation to indicate the reorganization of electron density. Denote **all** intermediates, lone pairs, nonzero formal charges, countercharges, and reversibility or nonreversibility.



Congratulations!

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