

Chemistry 333

Examination #2

April 11, 2005

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.

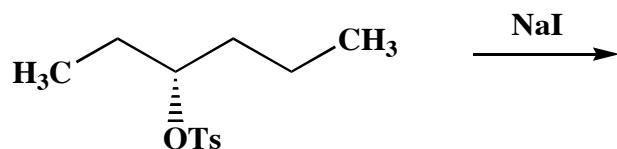
Molecular models are allowed for this examination. All electronic devices, including calculators, are unnecessary and are not allowed.

Name: _____

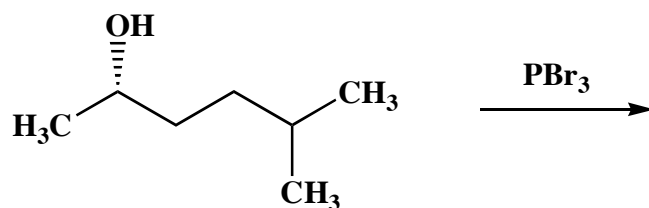
1. (25 points)

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

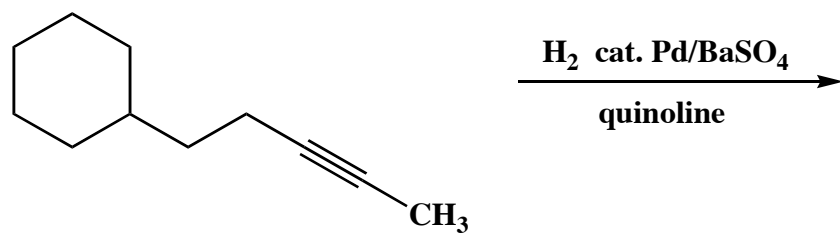
A.



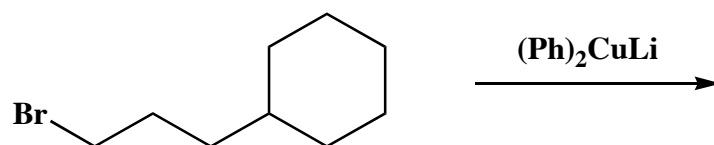
B.



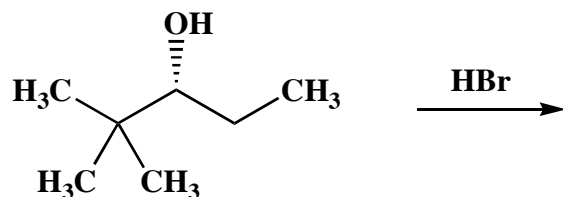
C.



D.



E.

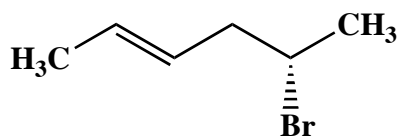
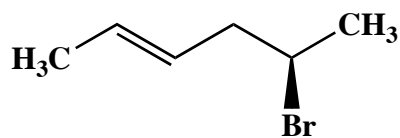


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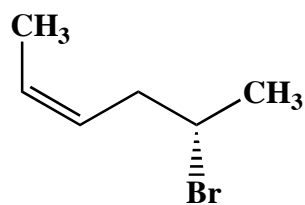
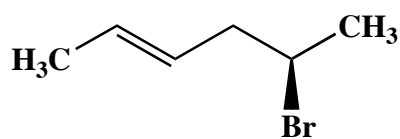
2. (25 points)

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

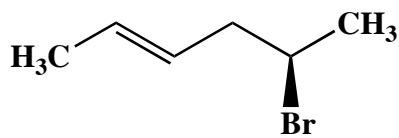
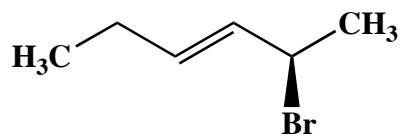
A.



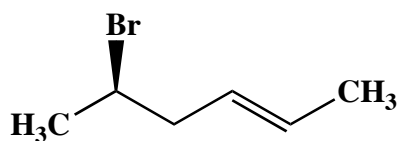
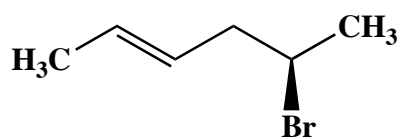
B.



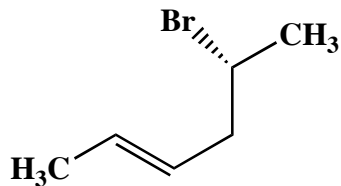
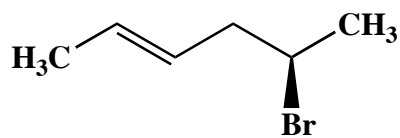
C.



D.



E.



Name: _____

3. (20 points)

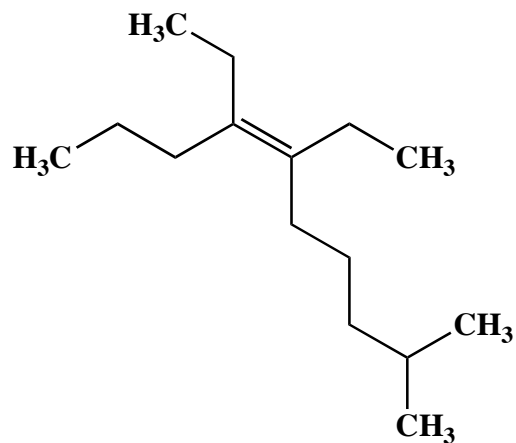
Answer the following two (2) questions precisely, succinctly and with correct grammar.

A. Explain why dimethyl sulfoxide (DMSO) is preferred over ethanol as a solvent for S_N2 reactions.

B. Explain why tertiary alkyl halides are more reactive than secondary alkyl halides in E1 eliminations.

4. (10 points)

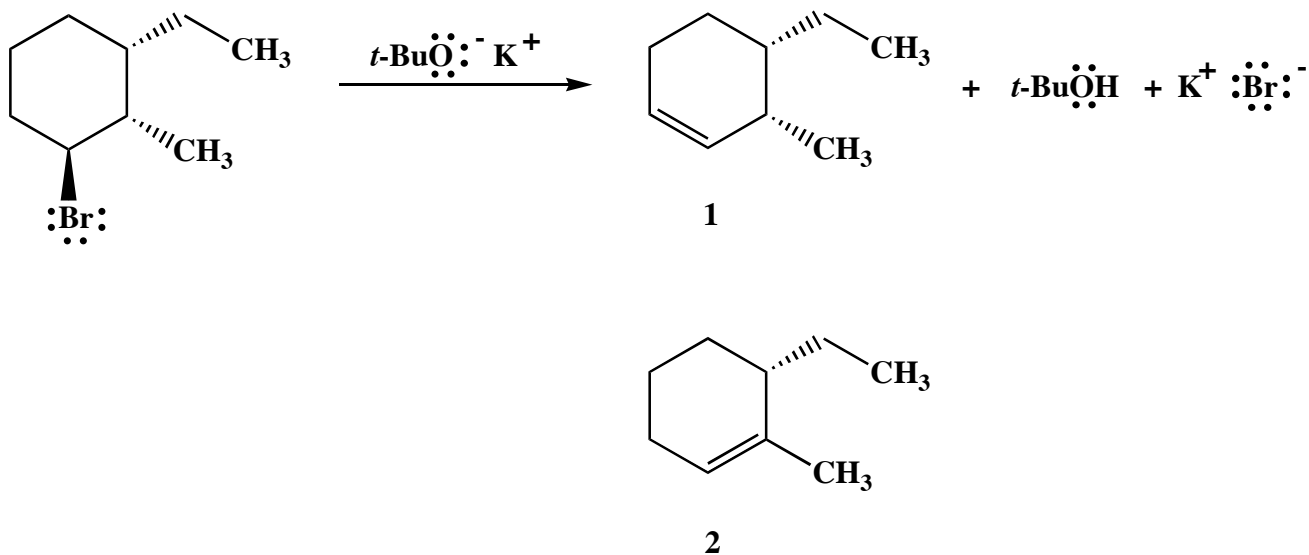
Use IUPAC nomenclature to write the systematic name of the following alkene.



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** lone pairs, nonzero formal charges and countercharges. Draw a three-dimensional picture to show why the alkene **1** is obtained. Explain clearly why the regioisomeric alkene **2** is not formed.



Congratulations!

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