

Second Exam

Name (PRINT) _____

Last, First

Chemistry 3331

Signature _____

October 20, 2006

ID# _____

Please circle class time.

Dr. Bean's 10:00 AM

Dr. Bean's 1:00 PM

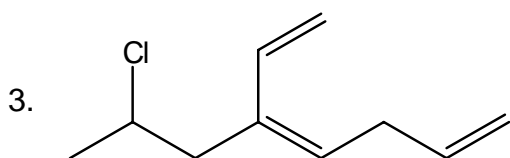
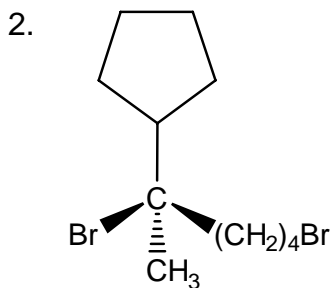
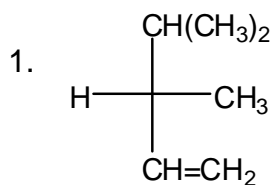
Page #	Score	
1. 16 pts.		
2. 12 pts.		
3. 14 pts.		
4. 18 pts.		
5. 18 pts.		
6. 11 pts.		
7. 11 pts.		

TOTAL _____

Note: Present your student ID when you return the exam booklet

A. Nomenclature: (16 points)

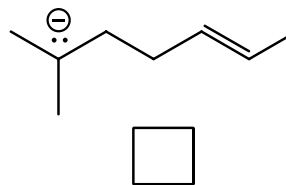
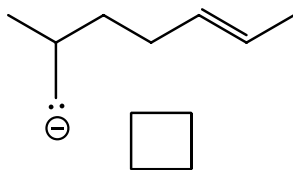
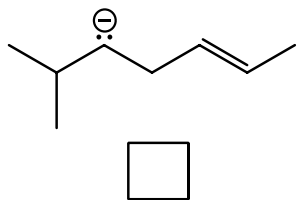
Give an acceptable IUPAC name for compounds 1-3. Be sure to indicate the **Stereochemistry** where appropriate. Draw a proper Fischer projection for compound 4.



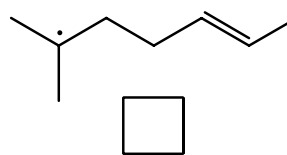
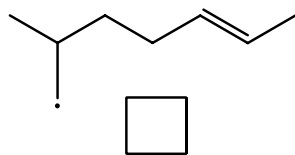
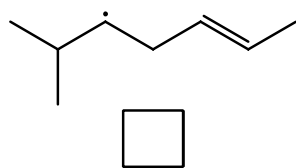
4. (3R, 4R) - 3,4-dibromooctane

B. Facts: Total points = 26

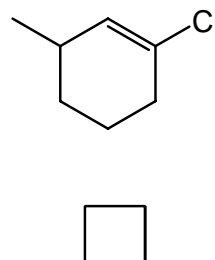
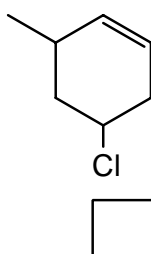
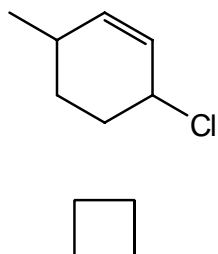
1. Place the following carbanions in order of increasing stability. (1=least stable, 3=most stable) (3pts.)



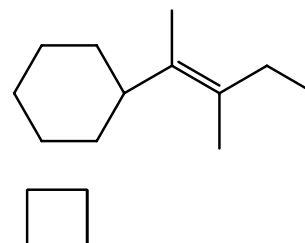
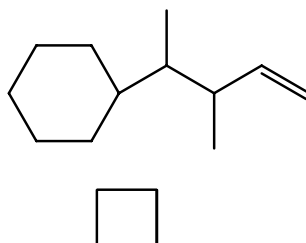
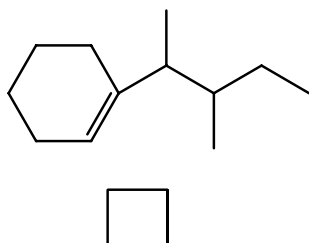
2. Place the following radicals in order of increasing stability. (1=least stable, 3=most stable) (3pts.)



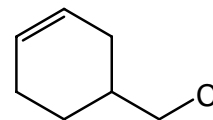
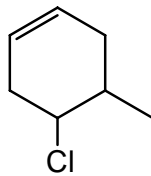
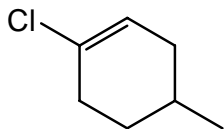
3. Rank the following alkyl chlorides in order of increasing reactivity in an E1 process. (1=least reactive, 3=most) (3 pts.)



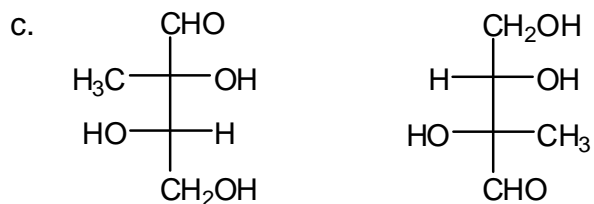
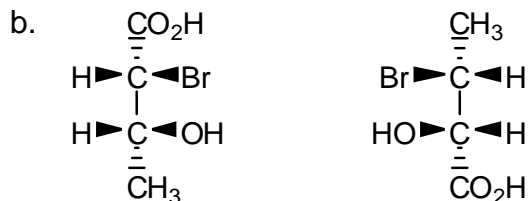
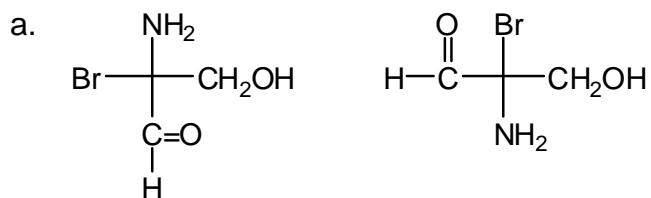
4. Place the following alkenes in order of increasing stability. (1=least stable, 3=most stable) (3 pts.)



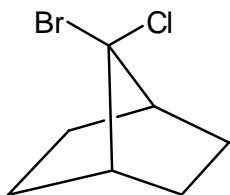
5. Rank the following alkyl chlorides in order of increasing reactivity in an S_N2 process. (1=least reactive, 3=most) (3 pts.)



6. Label each of the following pairs as identical, structural isomers, enantiomers or diastereomers. (9 pts.)

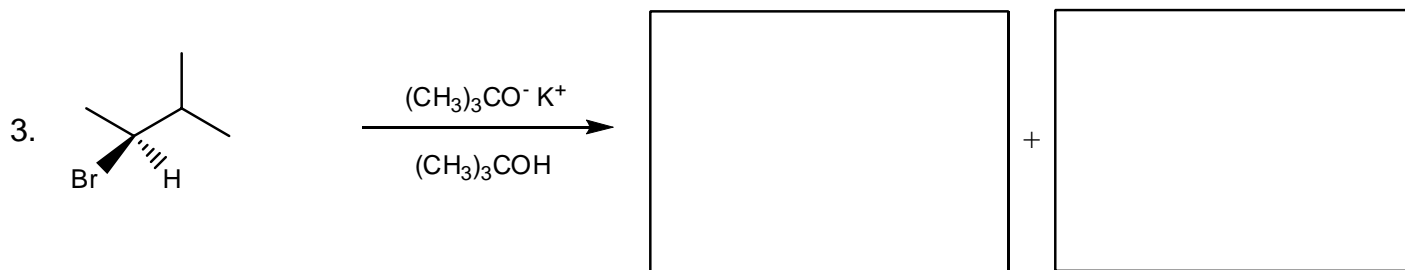
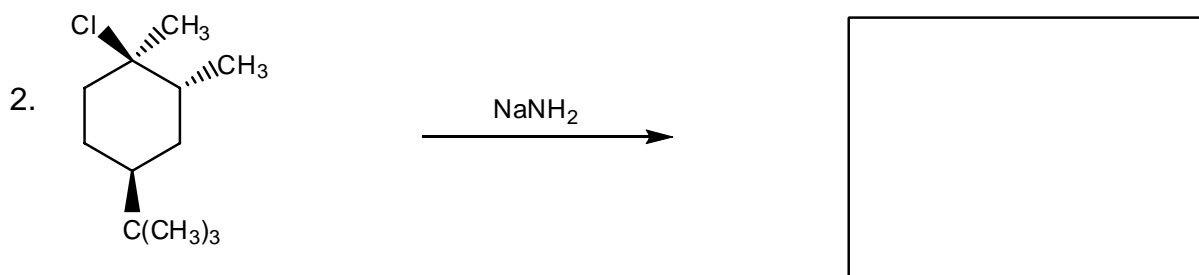
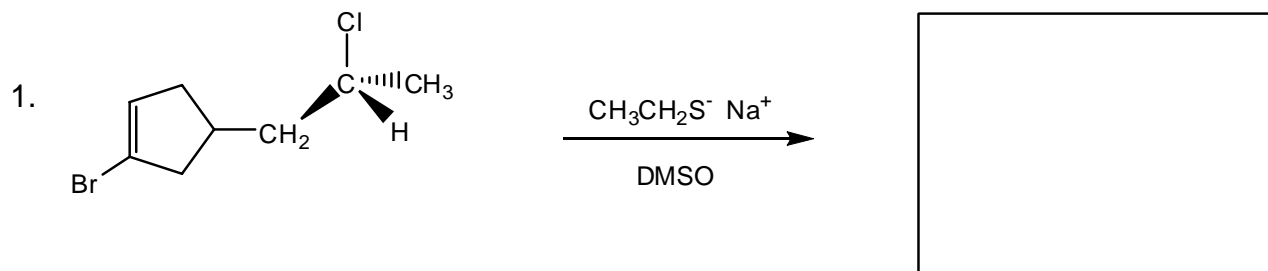


7. Label any chiral carbons with an asterisk (*). Is the molecule chiral or achiral?

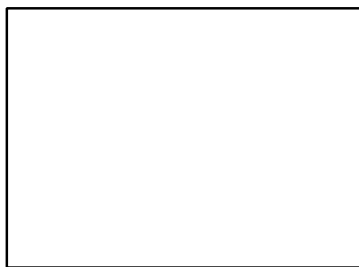
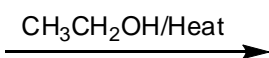
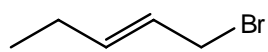


C. Reactions: Total = 36 points, 6 points each

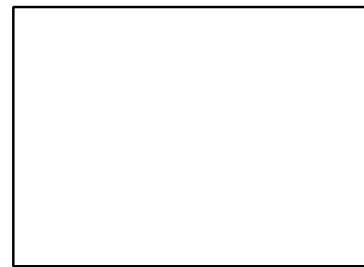
Please provide the major product in the answer box unless otherwise indicated. Be sure your drawing indicates stereochemistry if applicable.



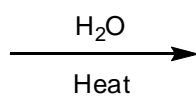
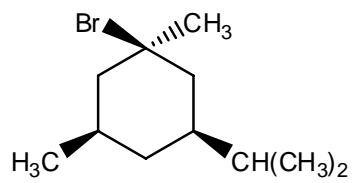
4.



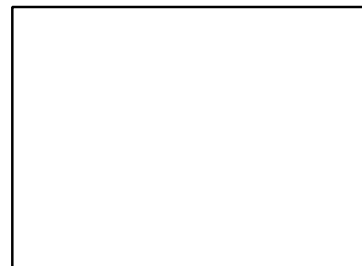
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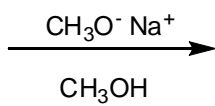
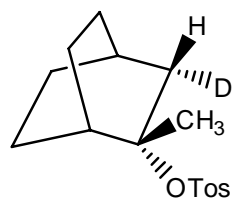
5.



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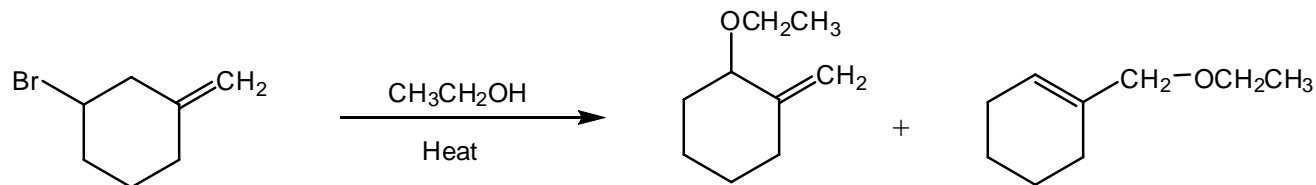


6.



D. Mechanisms: (11 points)

The reaction presented below produces several products. Provide clear mechanisms to explain the formation of the two products shown. Use curved arrows to indicate "electron flow". Remember to show only one step at a time. **Show all intermediates and all formal charges.** **Do not show transition states!** In the box below, draw the structure of a diene formed in this reaction.



E. Synthesis: (11 points)

Synthesize the molecule below from any alkane or cycloalkane of five carbons or less and any inorganic reagents. (Please do not include mechanisms!)

