

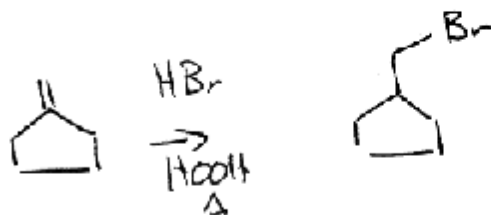
Key

Chemistry 3311-100
Organic Chemistry/Dr. Barney Ellison
20.III.97 Thurs @ 19:00 → 20:30/2nd Exam

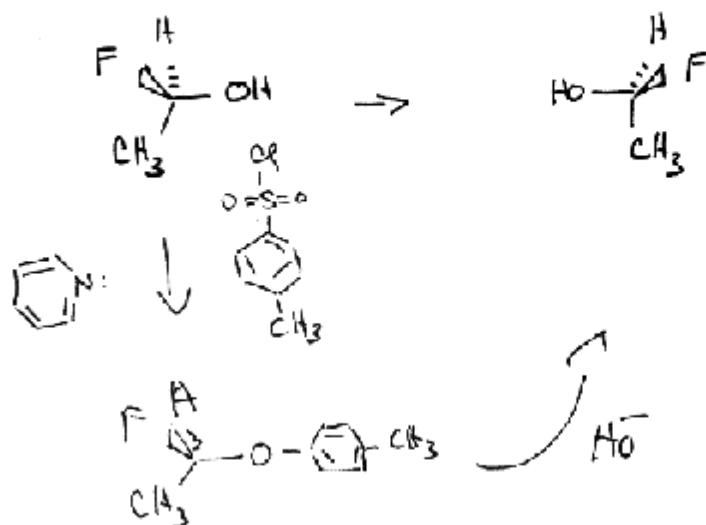
Name: Key (please print)

1. (20 pts) Carry out the following transformations. Use any reagents you like.

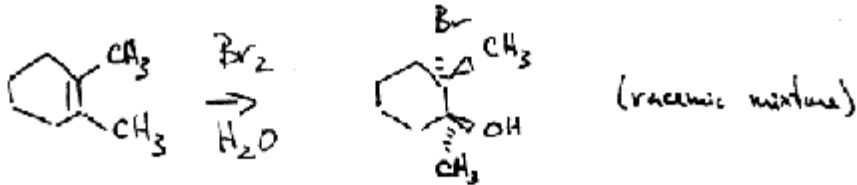
a)



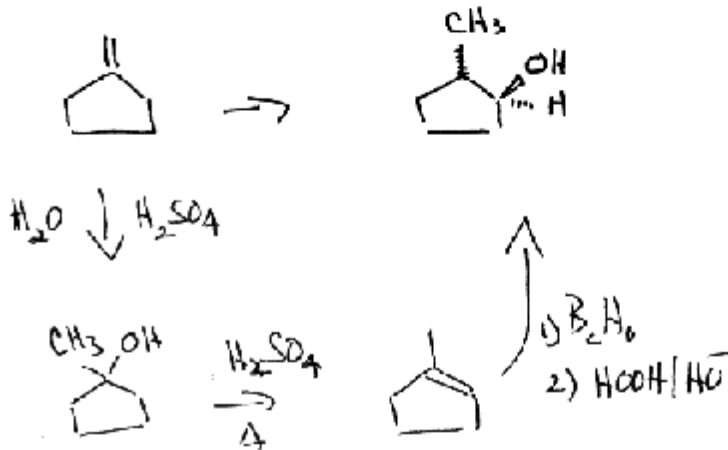
b)



a)

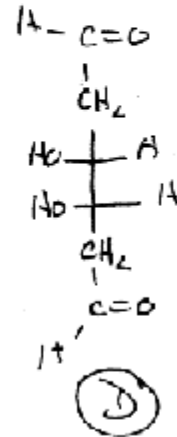
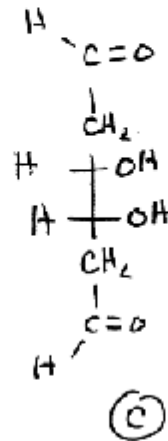
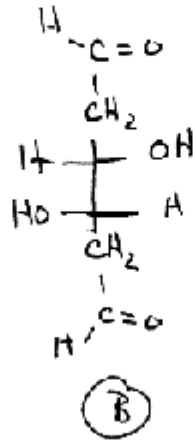
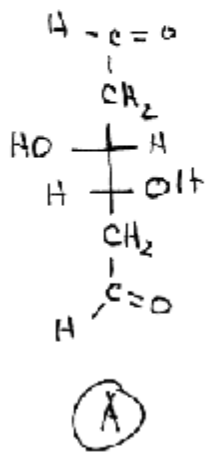
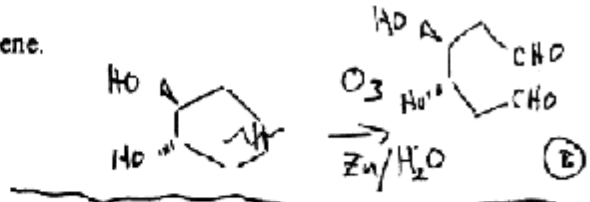


a)



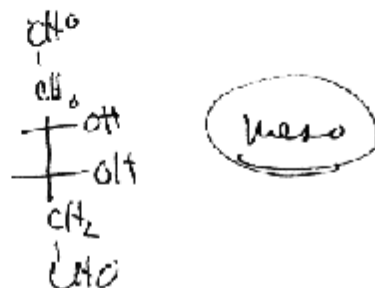
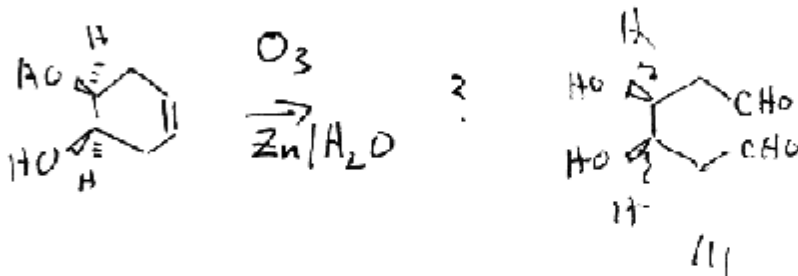
2. (10 pts) Consider the ozonolysis of the cyclohexene.

- a) Which compound is the product of the reaction?
- b) Which of these compounds is chiral?
- c) Which of these compounds are enantiomers?
- d) Which of these compounds are diastereomers?

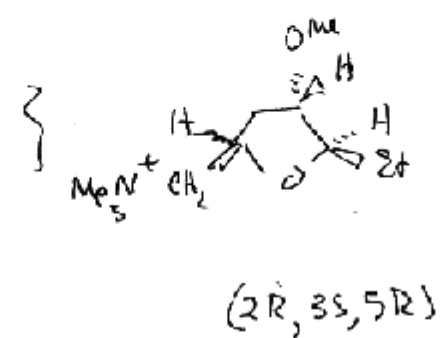
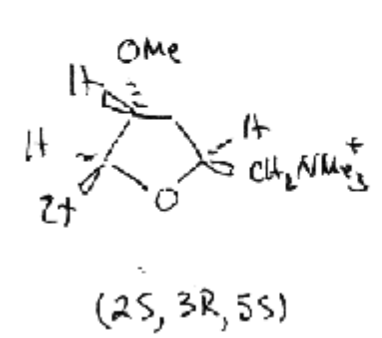
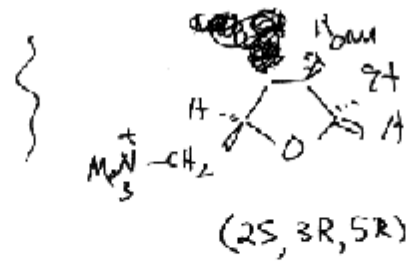
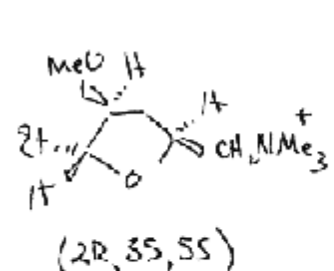
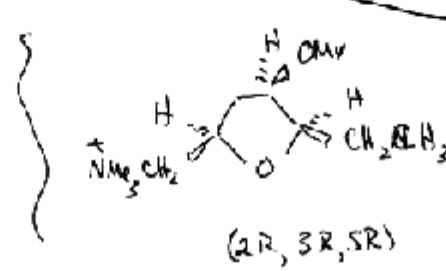
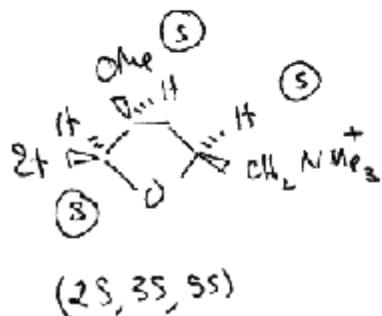
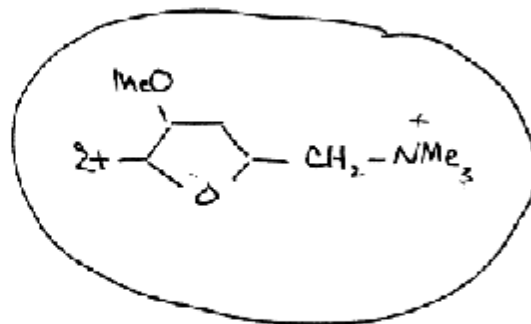
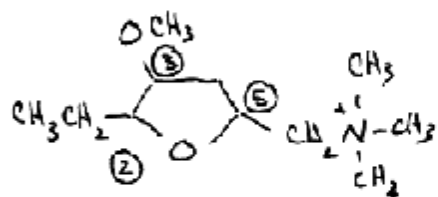


- a) (B) is product
- b) (A) + (B) are chiral (C) + (D) are meso & are identical \rightarrow achiral.
- c) (A) + (B) are enantiomers
- d) (A) + (C), (B) + (D) are diastereomers

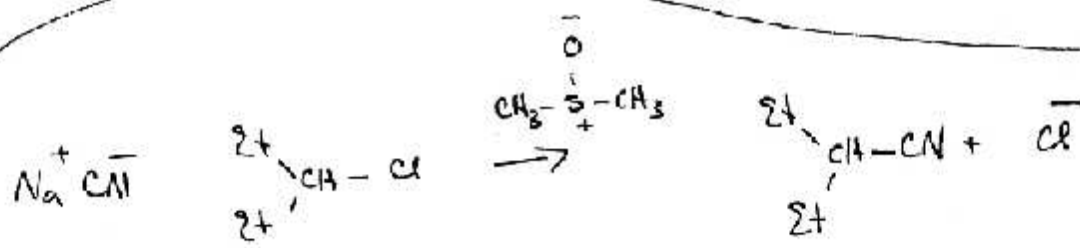
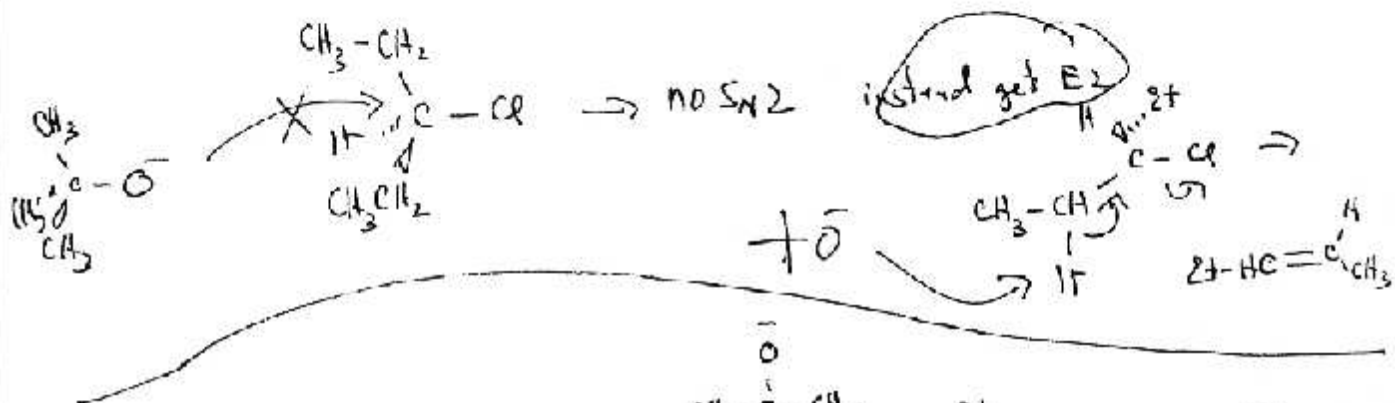
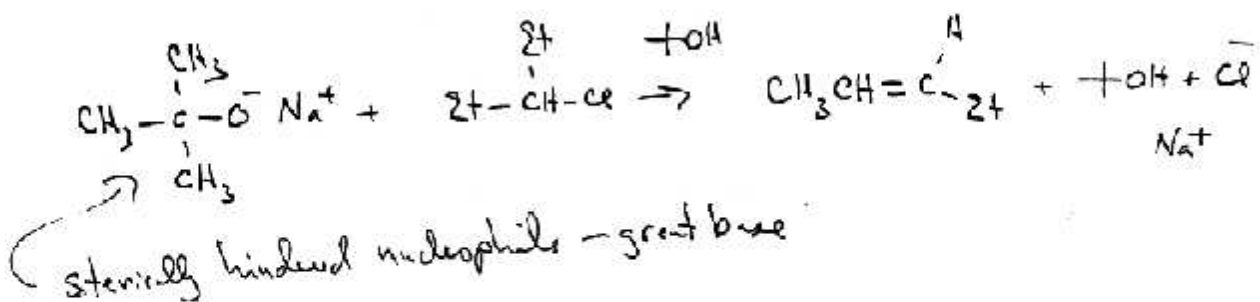
(5 points) Suppose that one had used the isomeric diol as the substrate. What is the product of ozonolysis here?



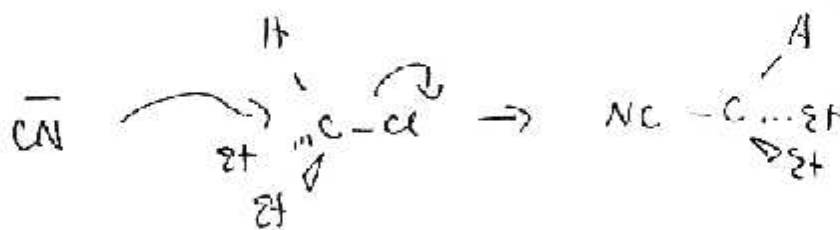
3. (15 pts) This natural products has 8 stereoisomers. Write all of them down & label each of the stereocenters. (2S, 3S, 5S) etc....



4. (10 pts) What is the mechanism of these reactions?



S_N2 here → CN⁻ is a weak base → great



DMSO is a polar, aprotic solvent. This renders CN⁻ much more reactive.

5. (40 pts) Carry out the following transformations. Use any reagents you like.

