

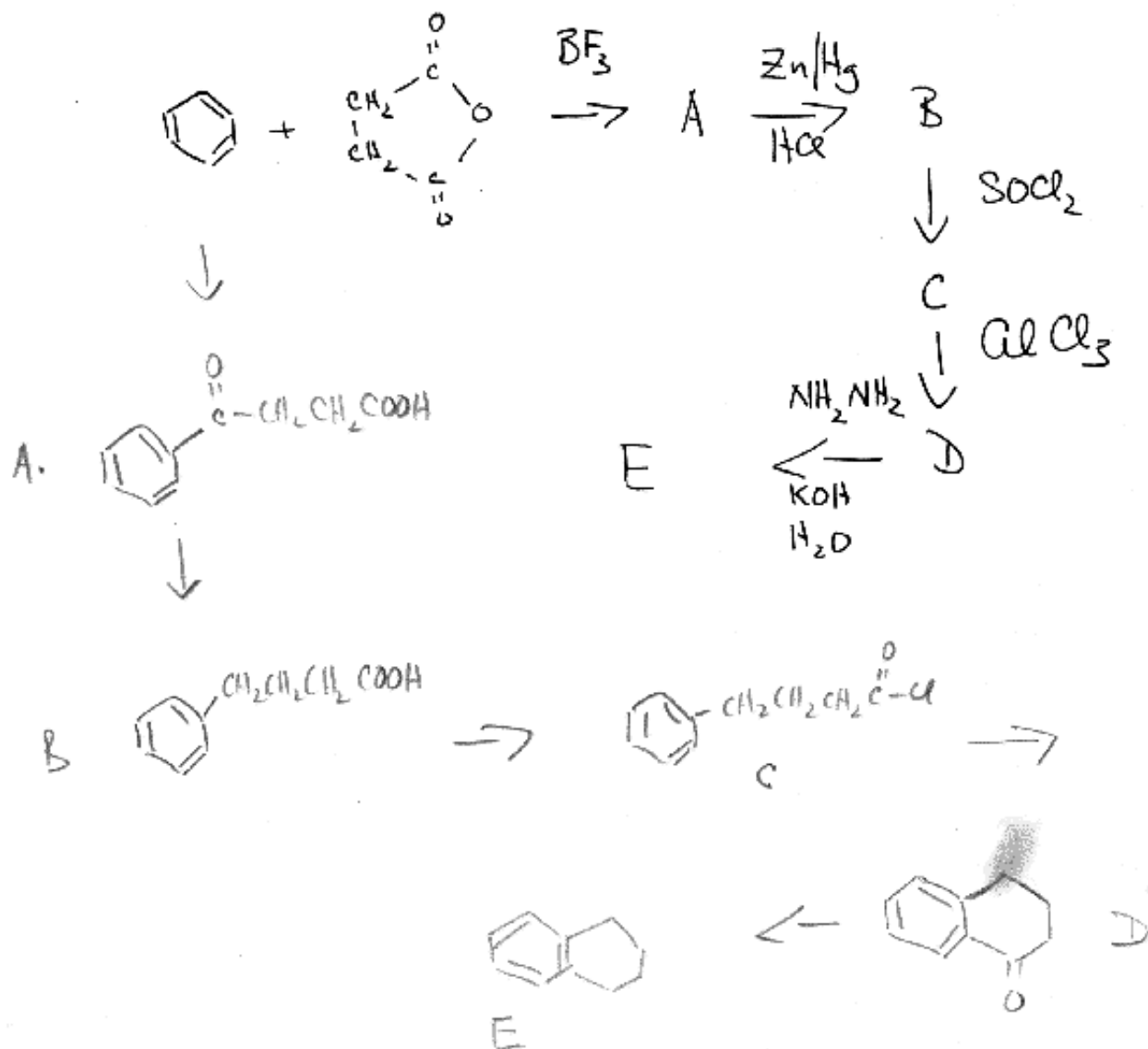
12.V.97

Chemistry 3311-100
Organic Chemistry/Dr. Barney Ellison~~24 Hours~~ @ 11:00 → 14:30/Final Exam
Mon.Name: Key (please print)

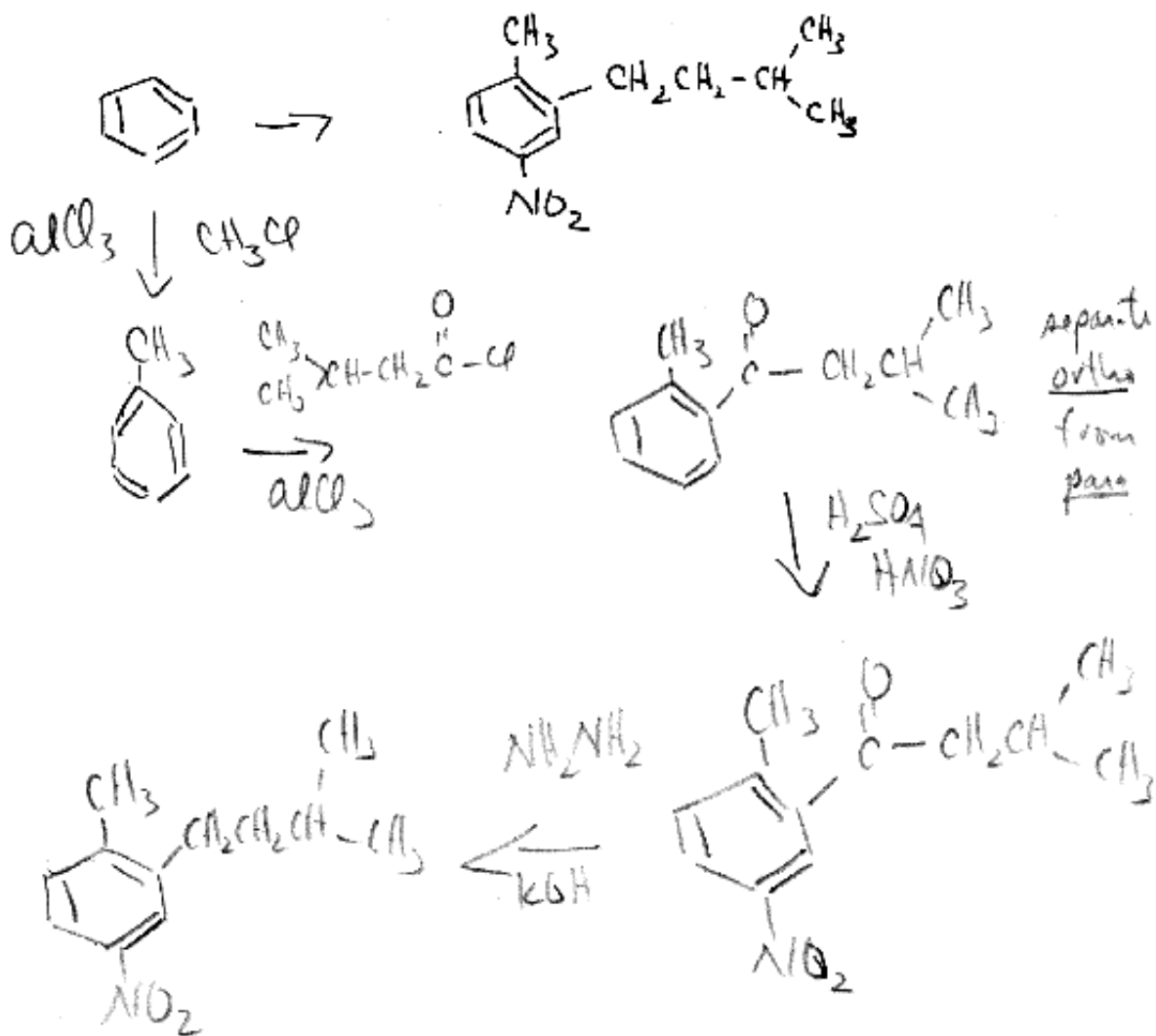
To double check my records, please list the scores of each of your hour exams?

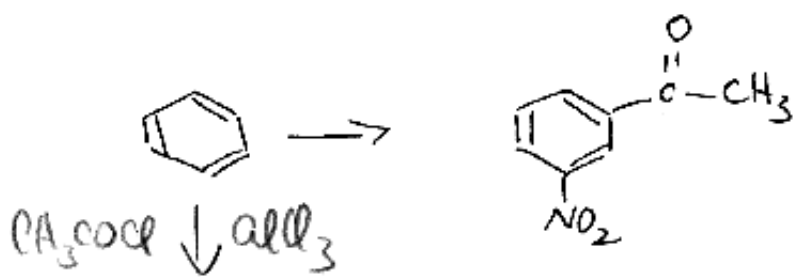
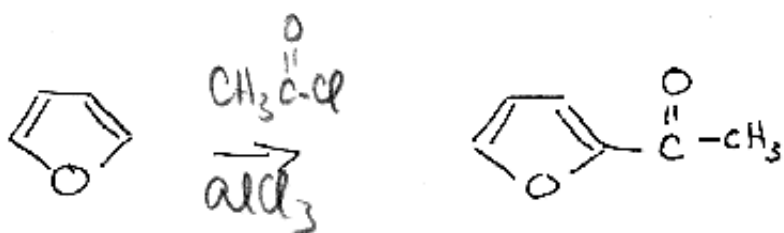
1st _____2nd _____3rd _____

1. (10 pts) Consider the following transformation. Show each of the intermediates along the way. [A → E]

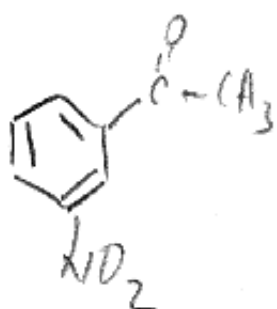


2. (30 pts) Carry out the following transformation. Use any reagents you like.





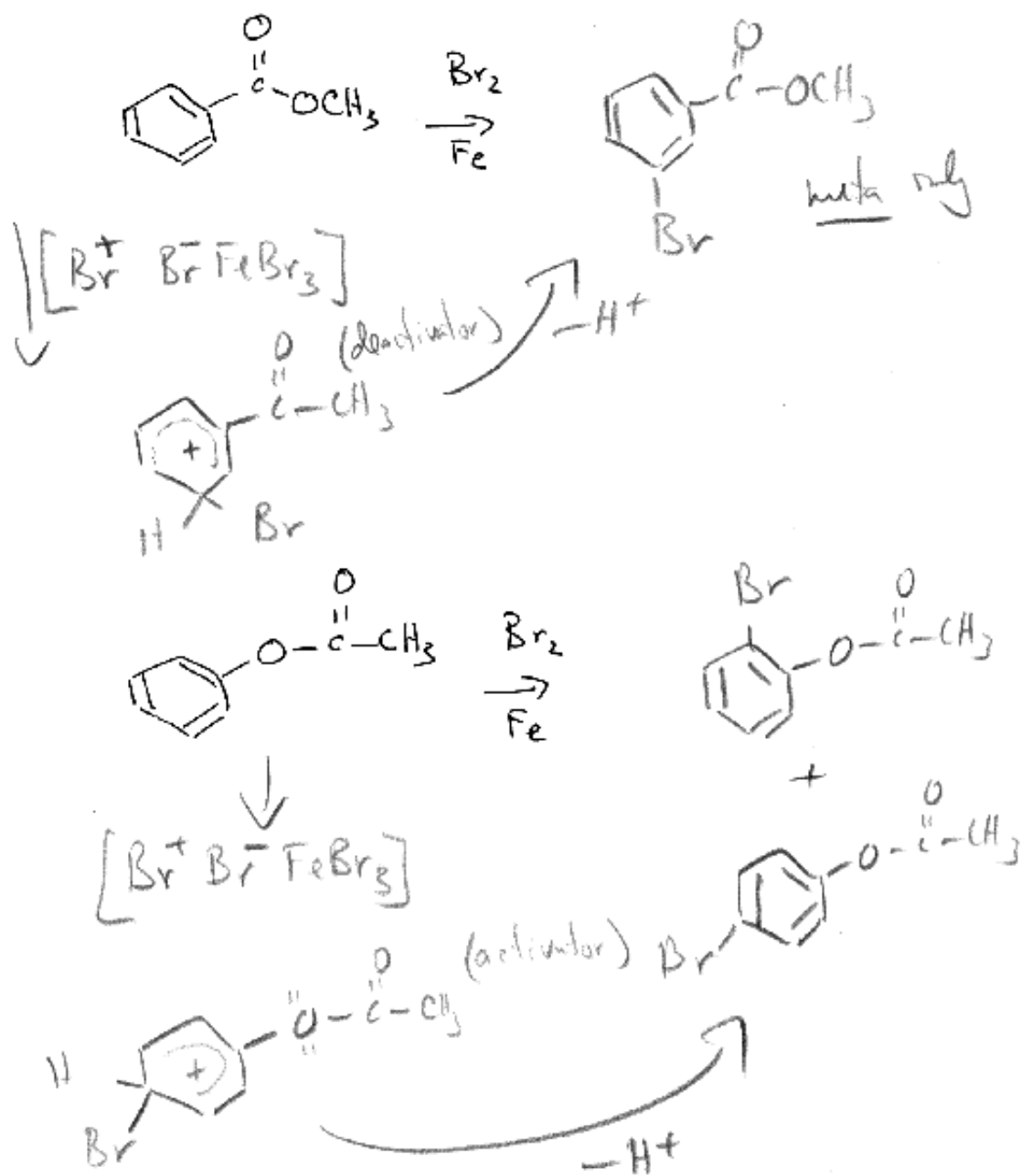
$\text{H}_2\text{SO}_4 \downarrow \text{HNO}_3$



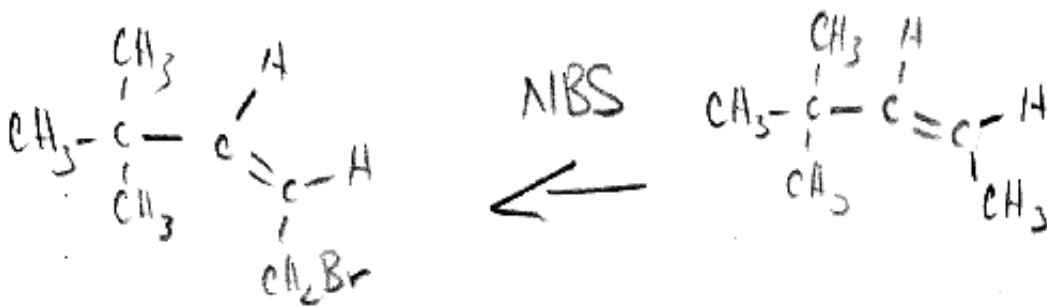
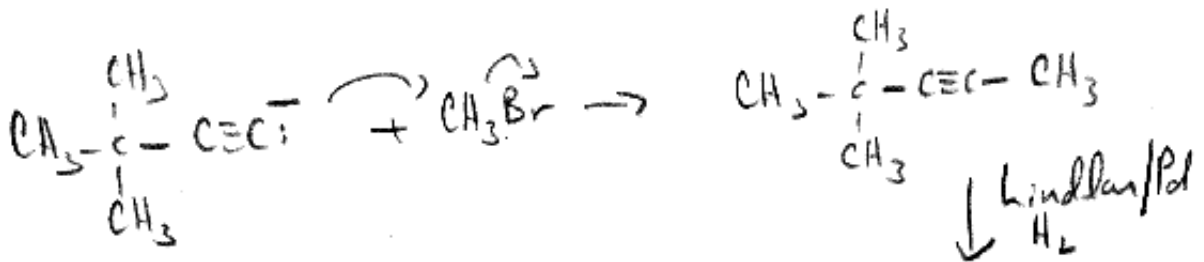
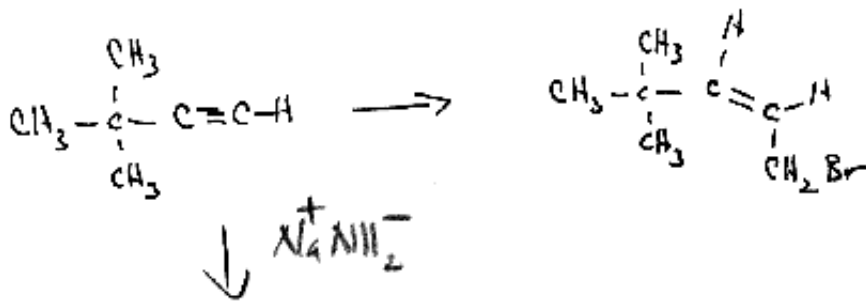
has to be
this order;

$\text{HNO}_3 \downarrow$
 $\text{CH}_3\text{COCl} \downarrow$
doesn't
go

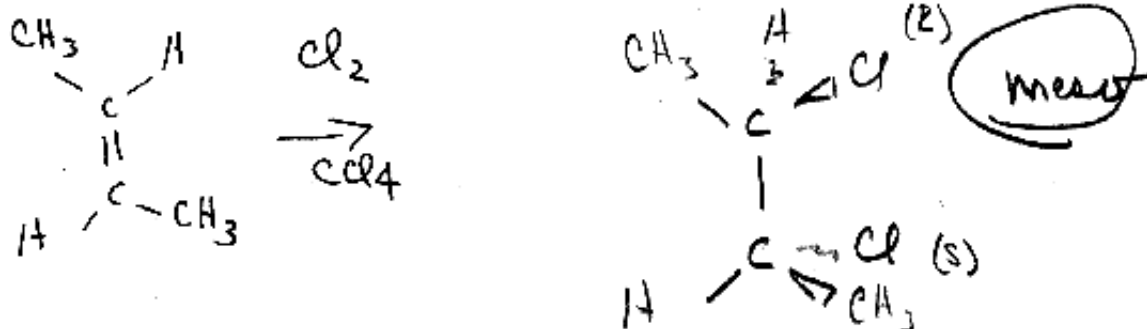
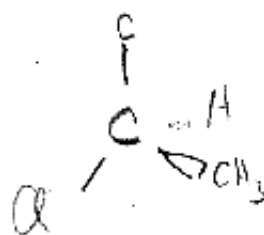
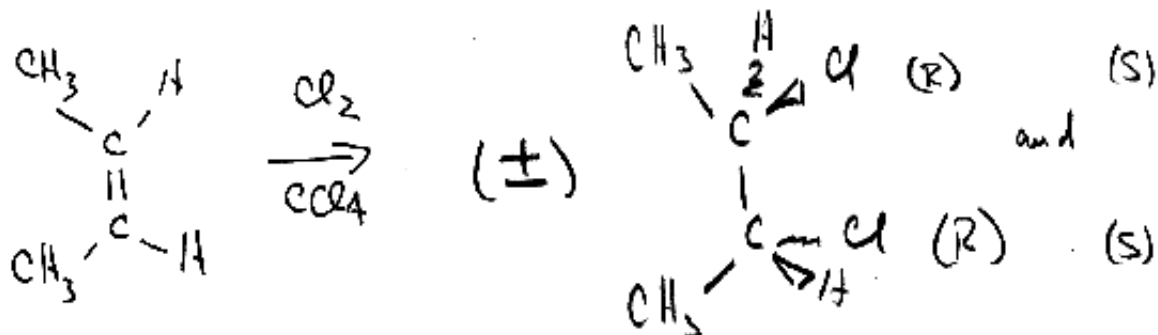
3. (10 pts) What is the product of each reaction? What is mechanism for these reactions?



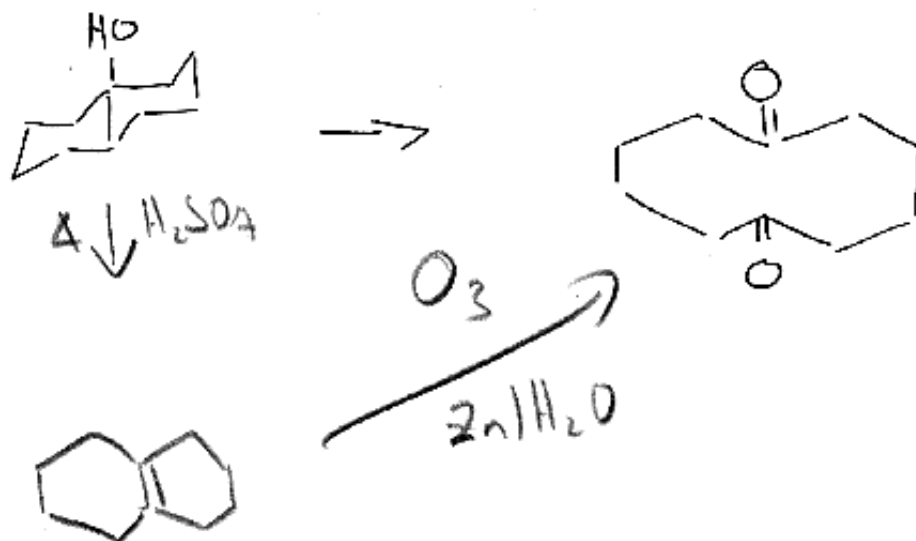
4. (10 pts) Carry out the following transformation. Use any reagents you like.



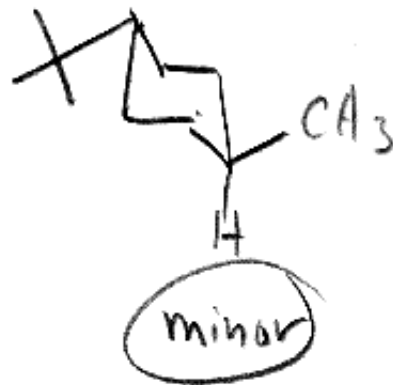
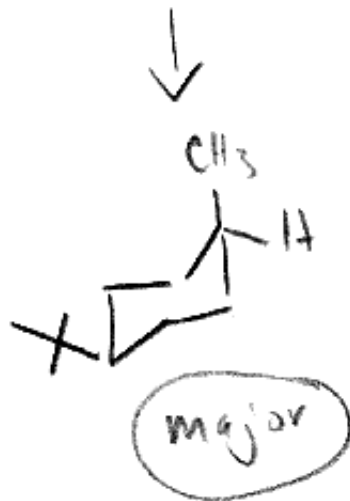
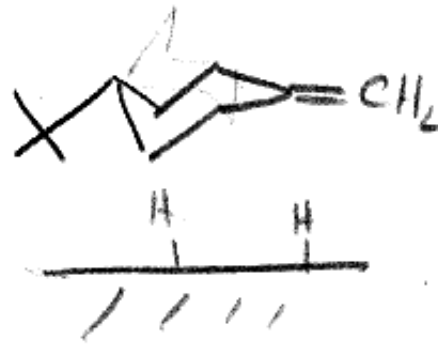
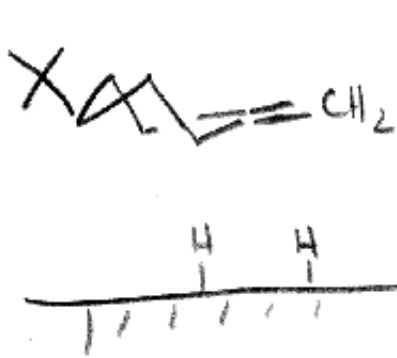
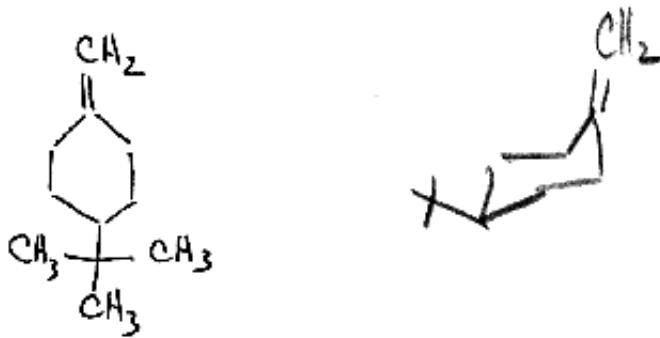
5. (10 pts) What are the products of these reactions? Label each stereocenter as (R) or (S).



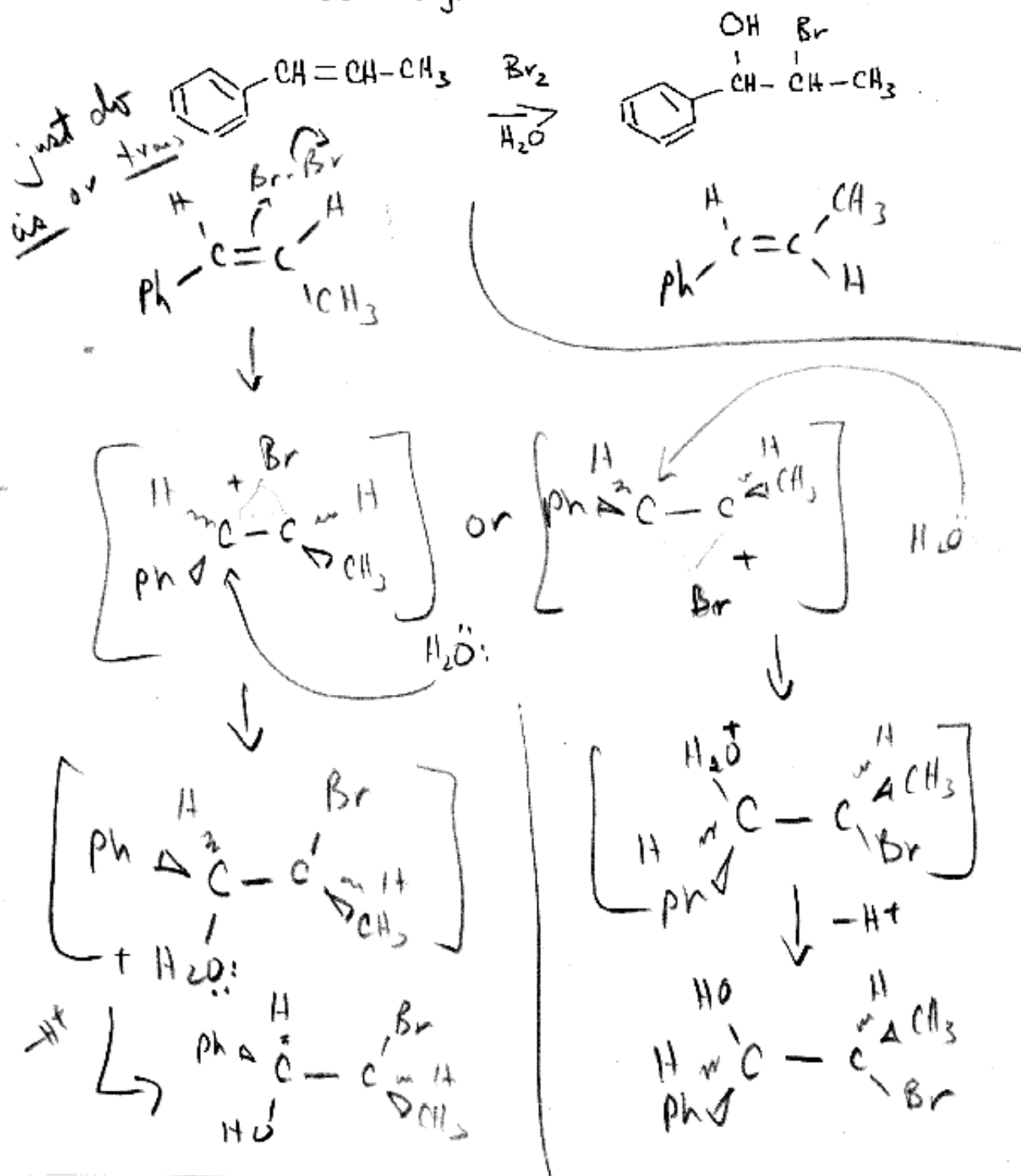
6. (10 pts) Carry out the following transformation. Use any reagents you like.



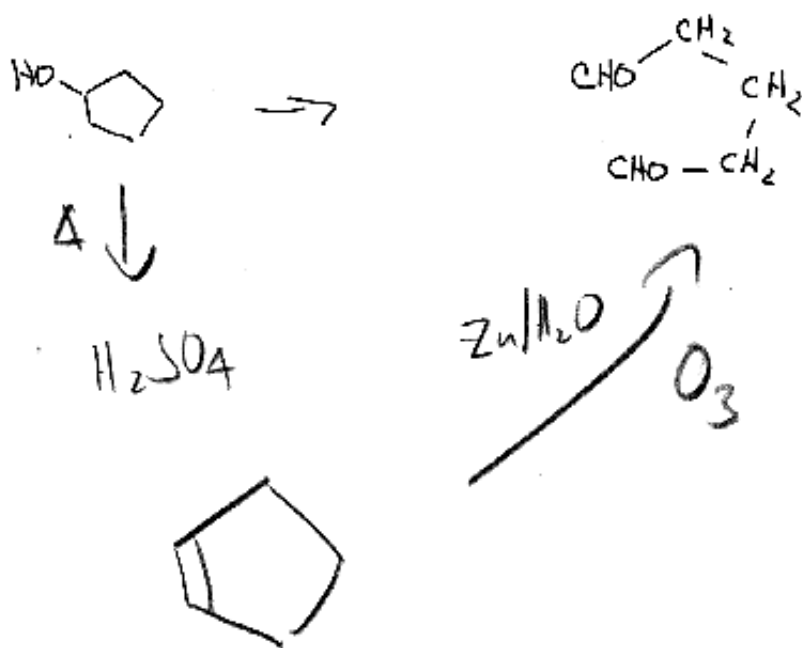
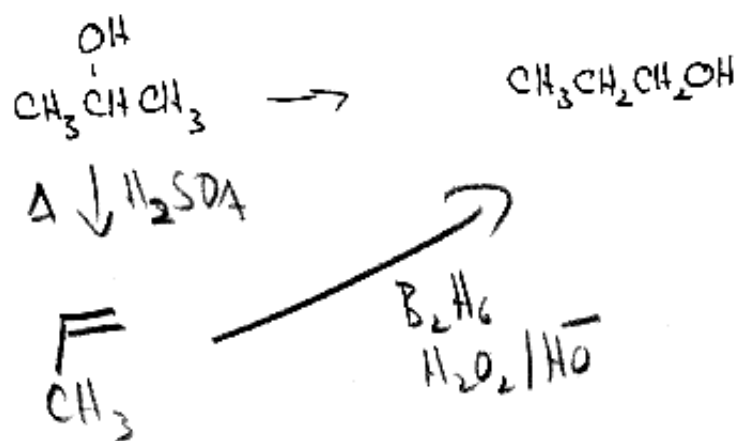
7. (10 pts) When this alkene is hydrogenated, you find two products. What are they? Which is major & which is minor?



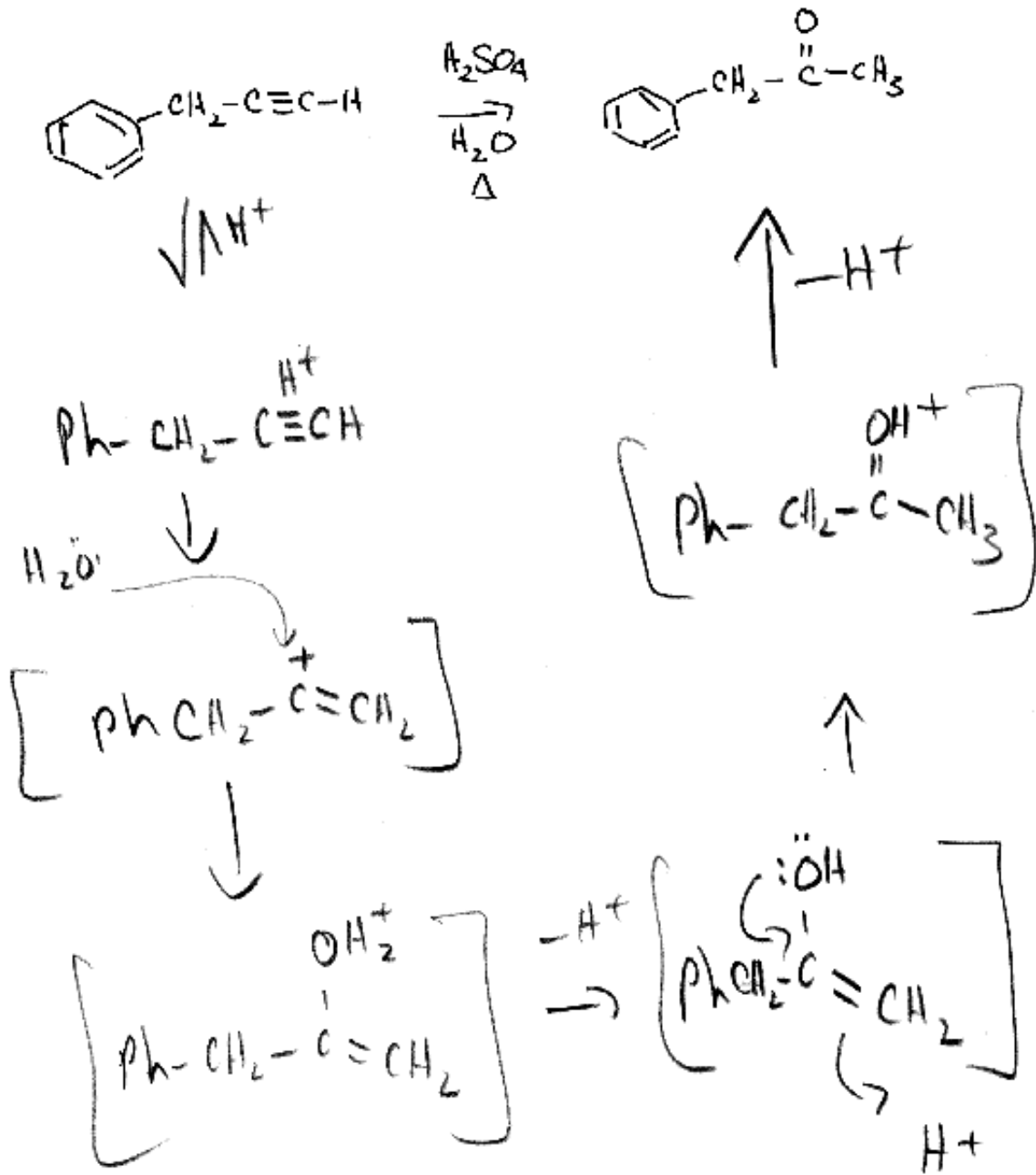
8. (10 pts) What is the mechanism of this reaction? Pay careful attention to stereochemistry.



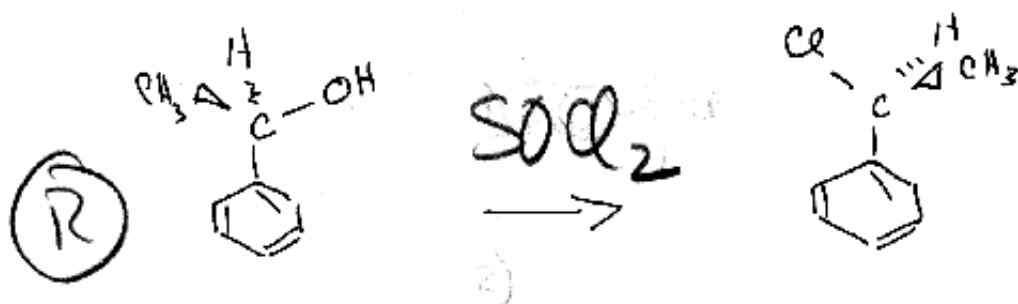
9. (10 pts) Carry out the following transformations. Use any reagents you like.



10. (10 pts) What is the mechanism of this reaction?

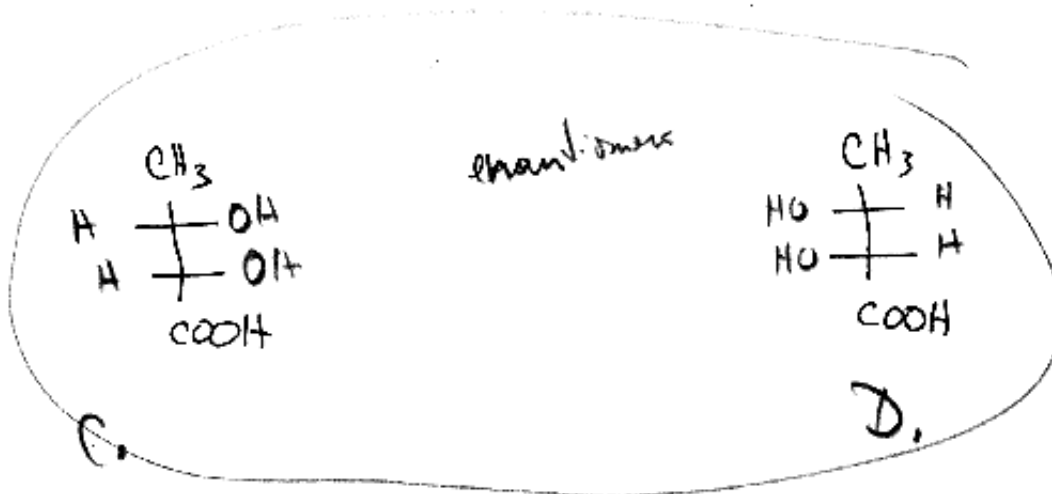
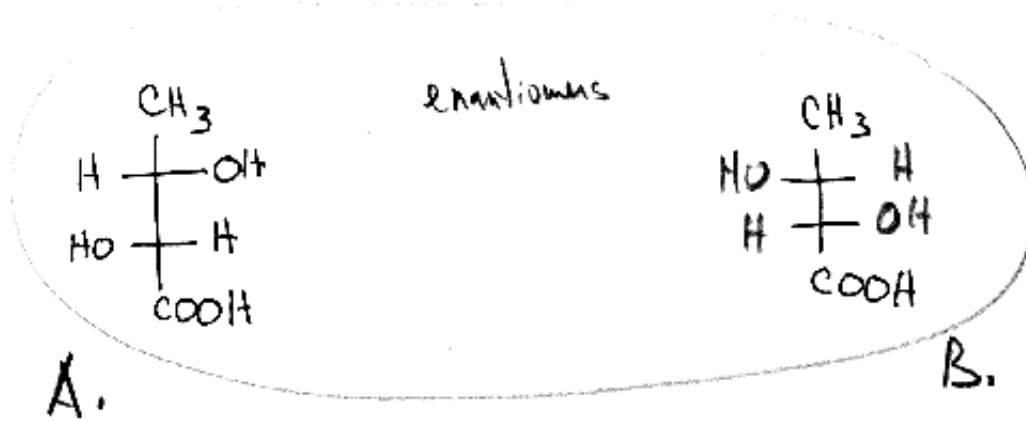


11. (10 pts) Carry out the following transformations. Use any reagents you like. What is the configuration of the starting material, R or S?



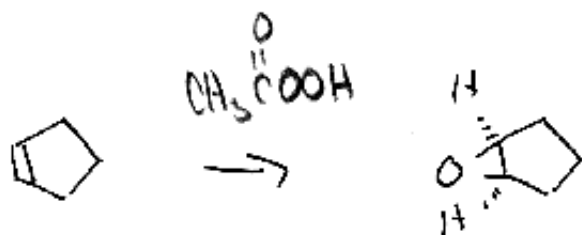
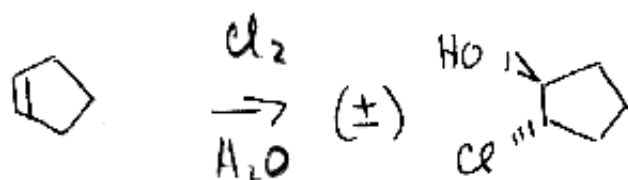
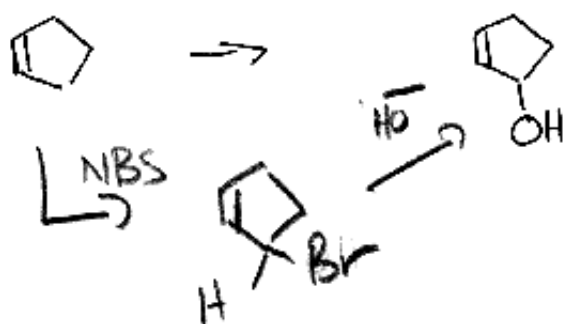
12. (10 pts) There are 4 stereoisomers of this diol.

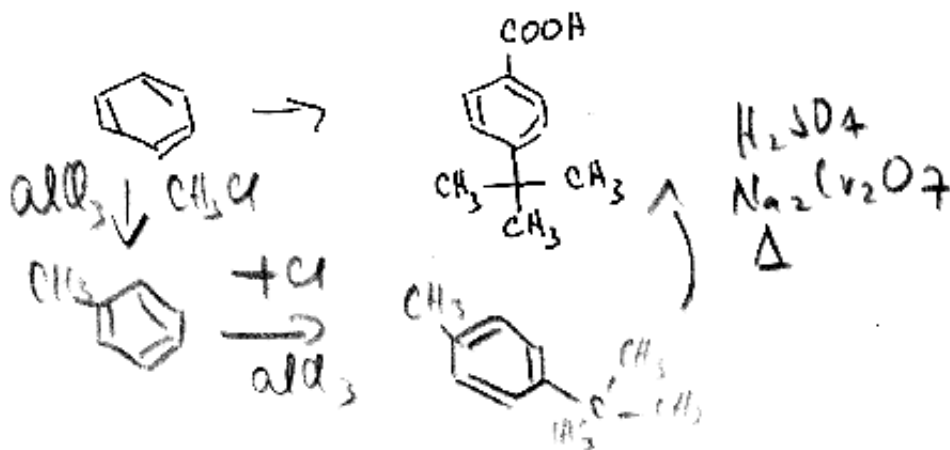
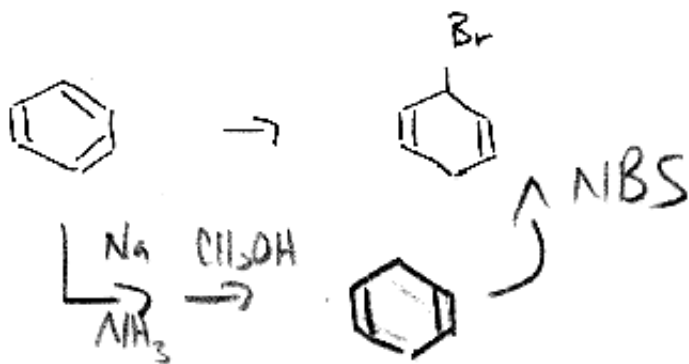
Write the 4 isomers. Which are enantiomers? Which are diastereomers?



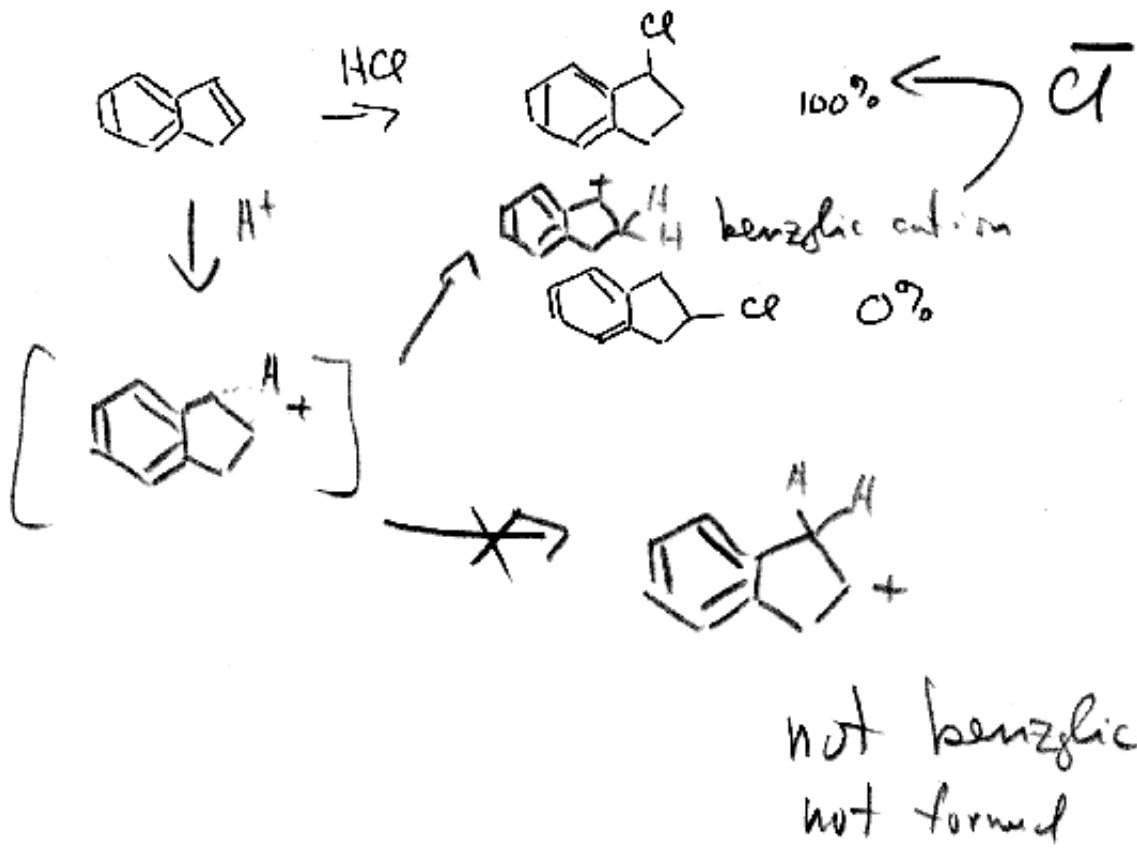
Diastereomers
are (A & B, C & D)

13. (30 pts) Carry out the following transformations. Use any reagents you like.

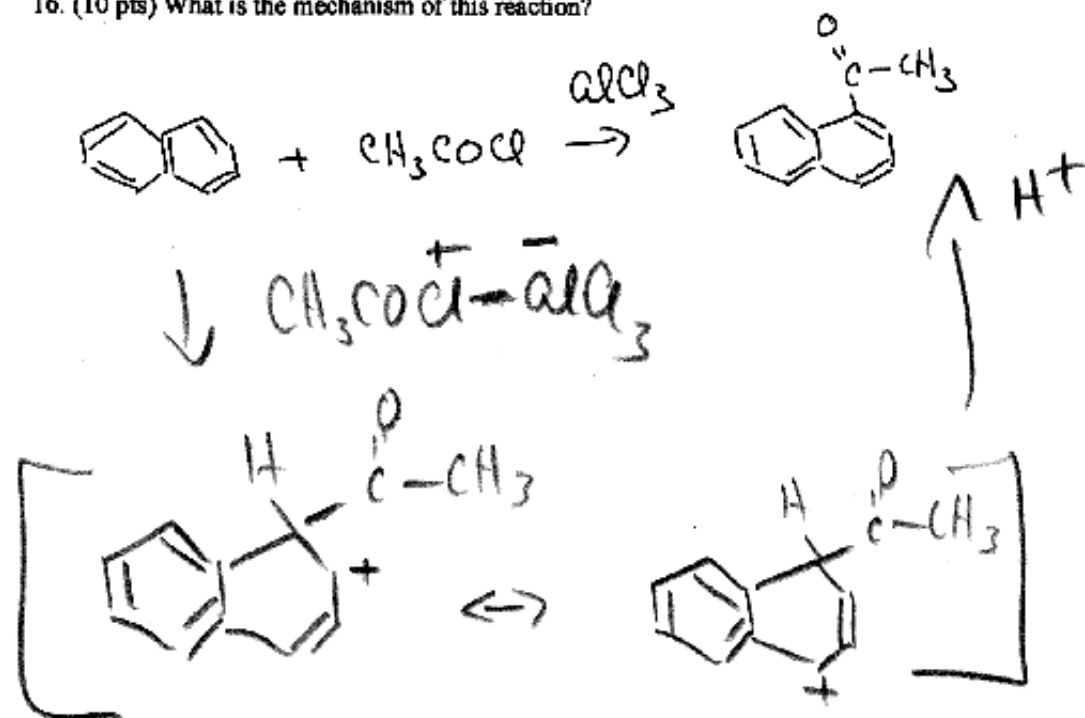




14. (10 pts) When indene is treated with HCl , why is only one chloride formed and not two?



16. (10 pts) What is the mechanism of this reaction?



The $\text{Naphthalene-}1\text{-}CH_2^+-C(=O)CH_3$ is not as stable & is not formed