

Spring 1996

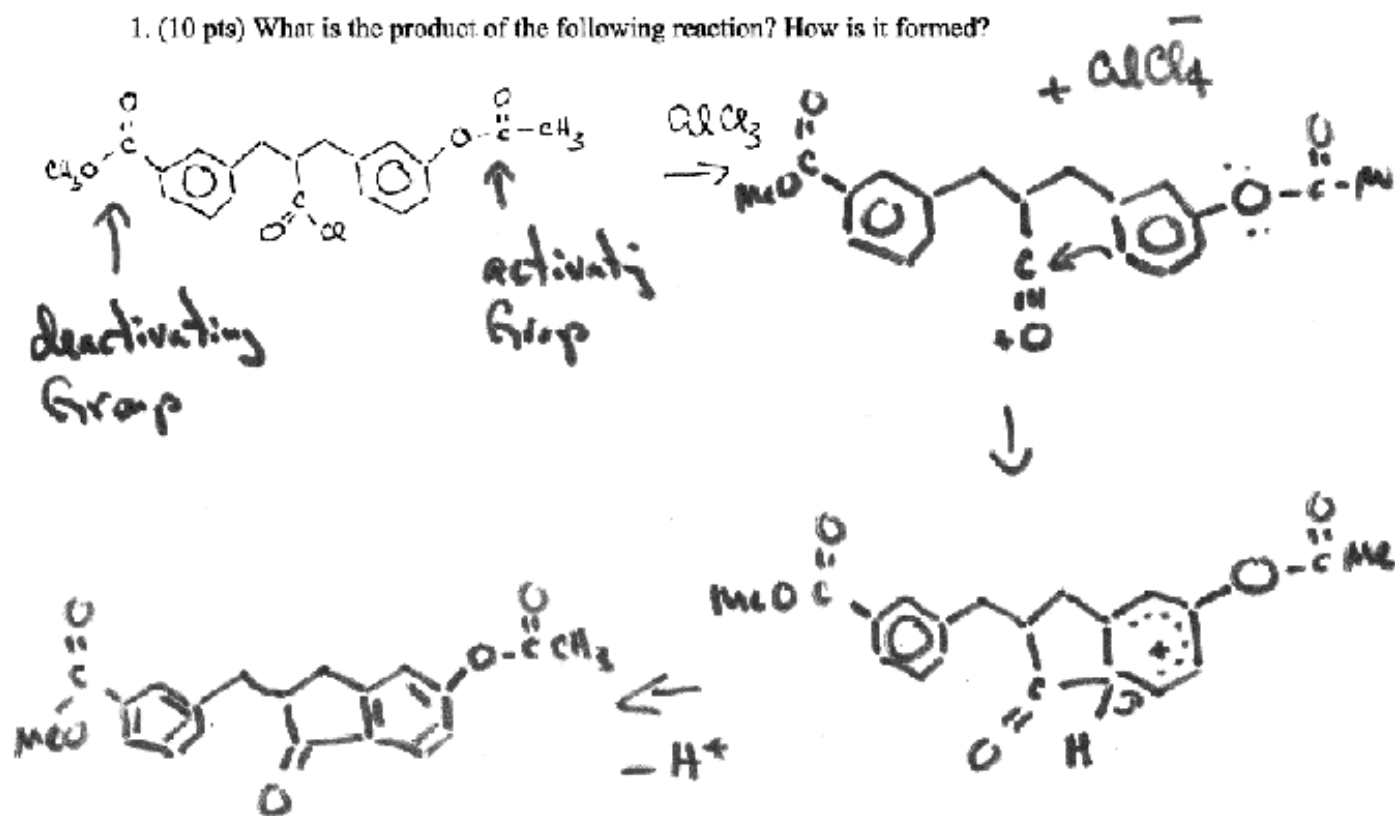
Organic Chemistry (Chemistry 3311)

Dr. Barney Ellison

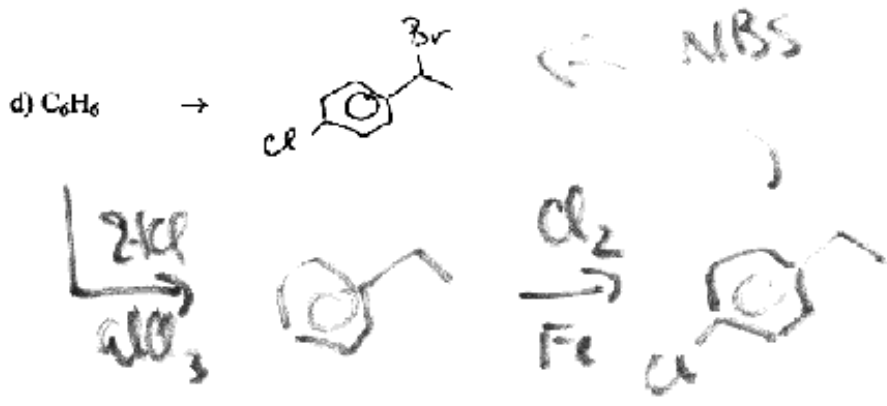
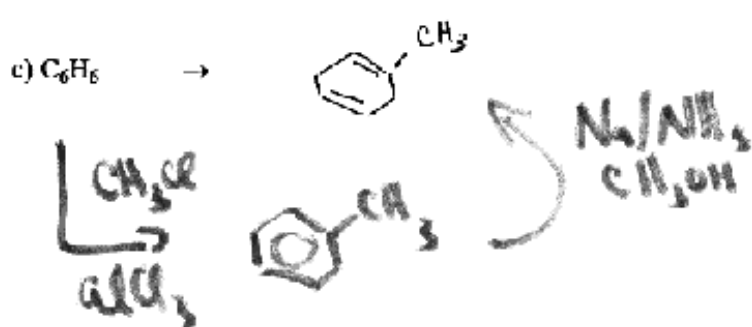
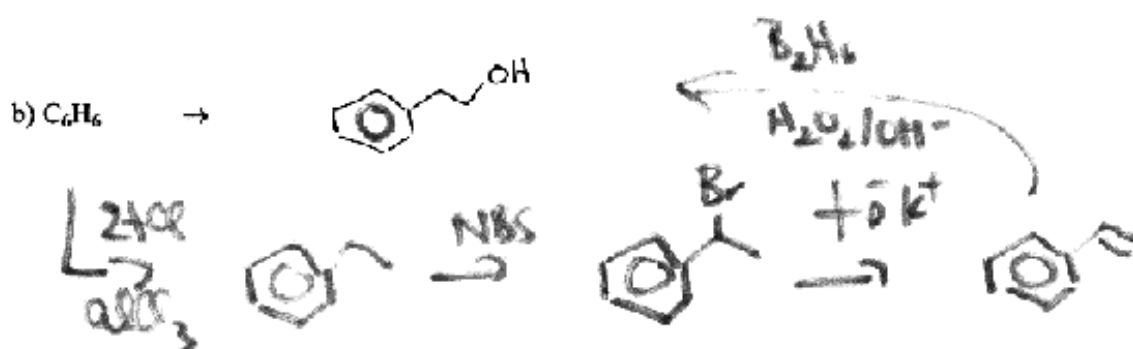
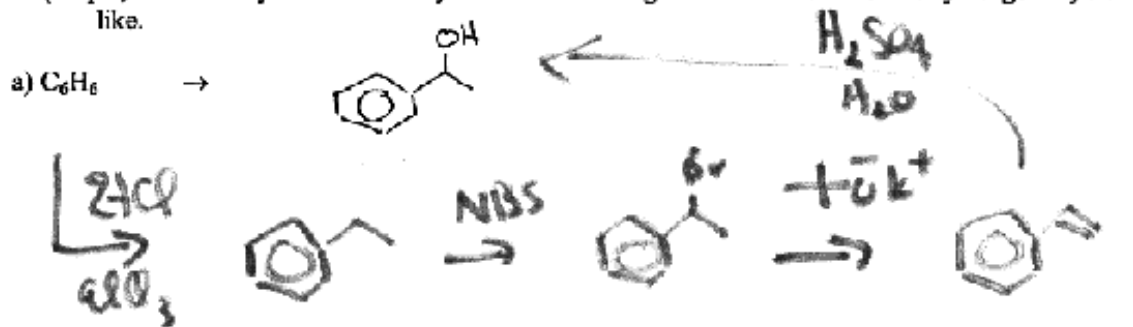
Final Examination Friday, 10.V.96 from 7:30 am to 10:30 am in Chem 140

Name Key (please print)

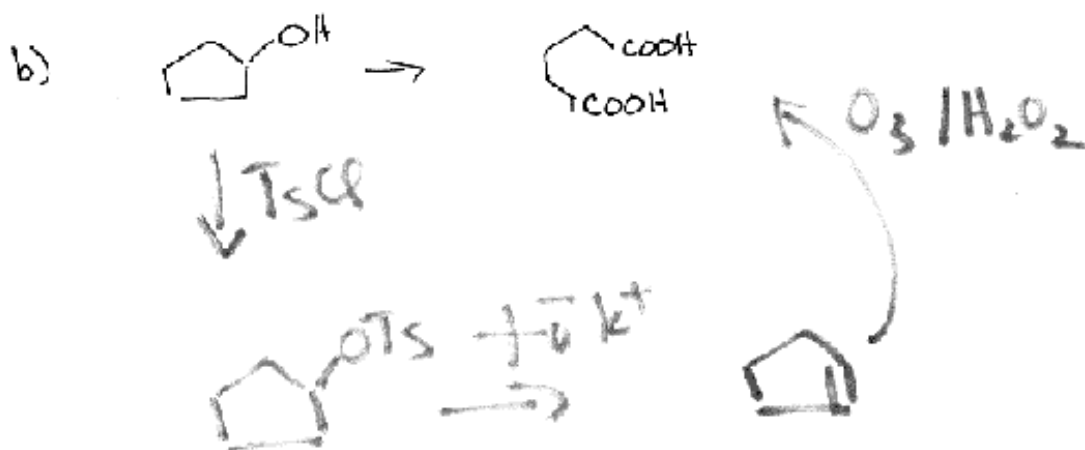
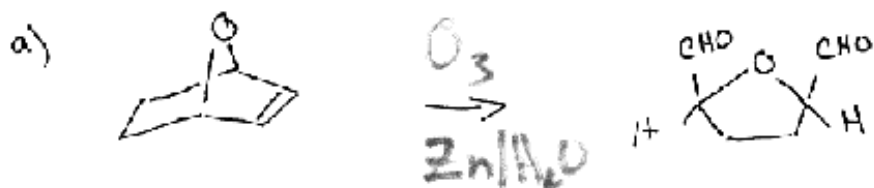
1. (10 pts) What is the product of the following reaction? How is it formed?



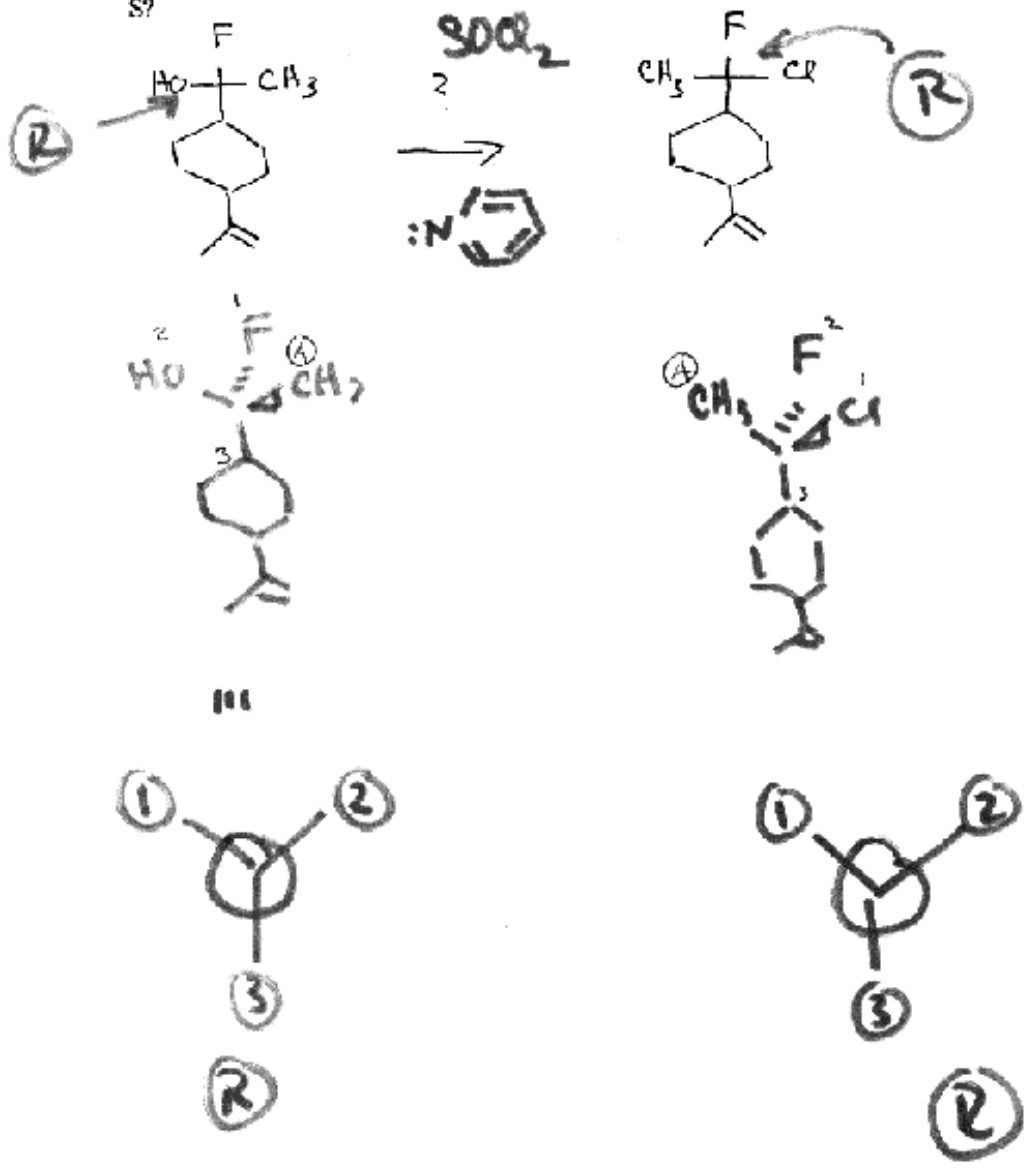
2. (20 pts) Devise a synthesis to carry out the following transformations. Use any reagents you like.



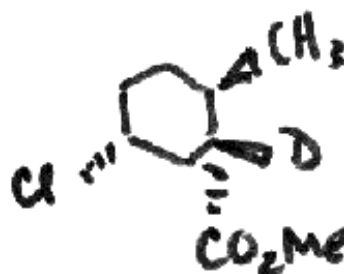
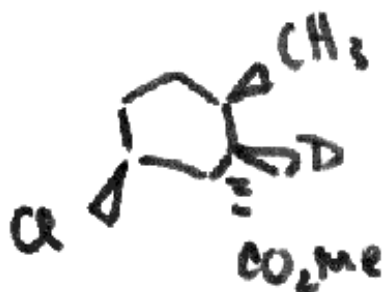
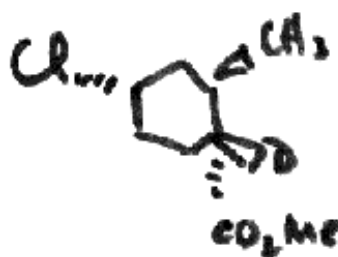
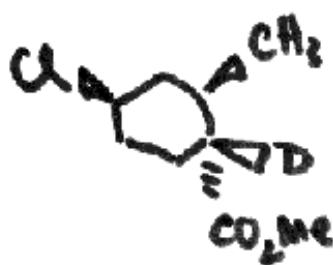
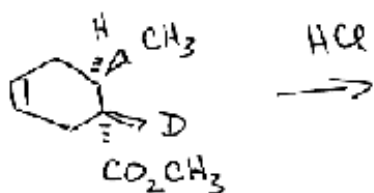
3. (10 pts) Devise a synthesis to carry out the following transformations. Use any reagents you like.



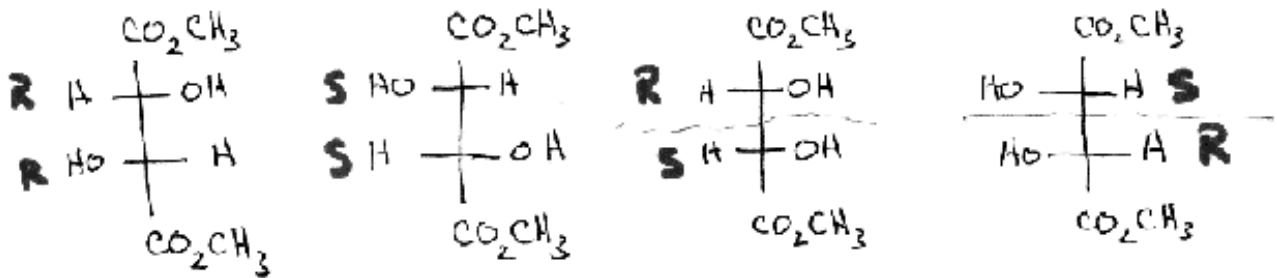
4. (10 pts) Devise a synthesis to carry out the following transformation. Use any reagents you like. What is the configuration at the chiral C in both starting material & product as R or S?



5. (10 pts) There are 4 isomers formed in the following reaction. What are they?



6. (20 pts) In each of the following structures, label each chiral center R or S? Which molecules are enantiomers? Which are diastereomers? Which are optical active?



A.                      B.

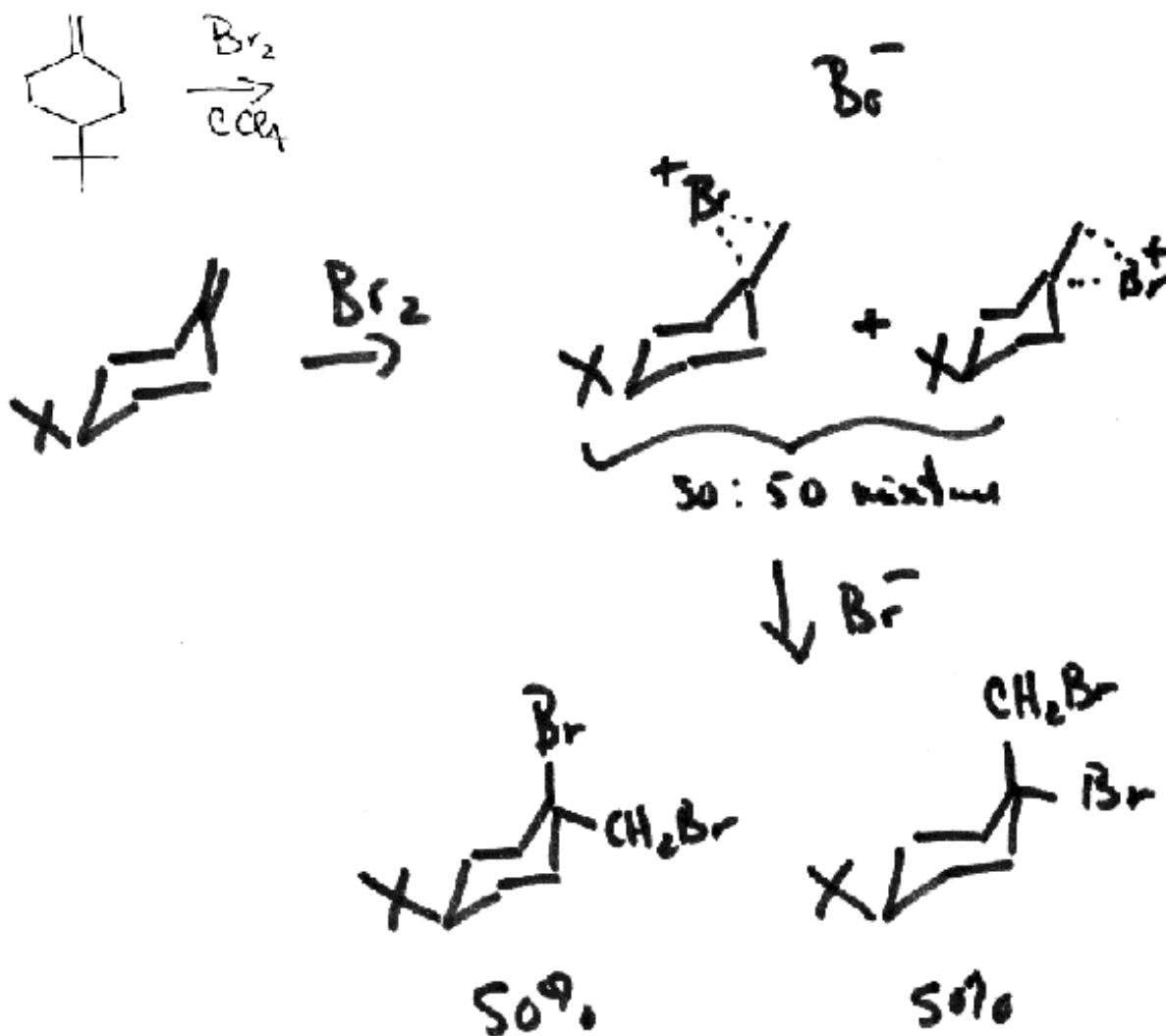
C.                      D.

Meso compound "identical"  
so achiral

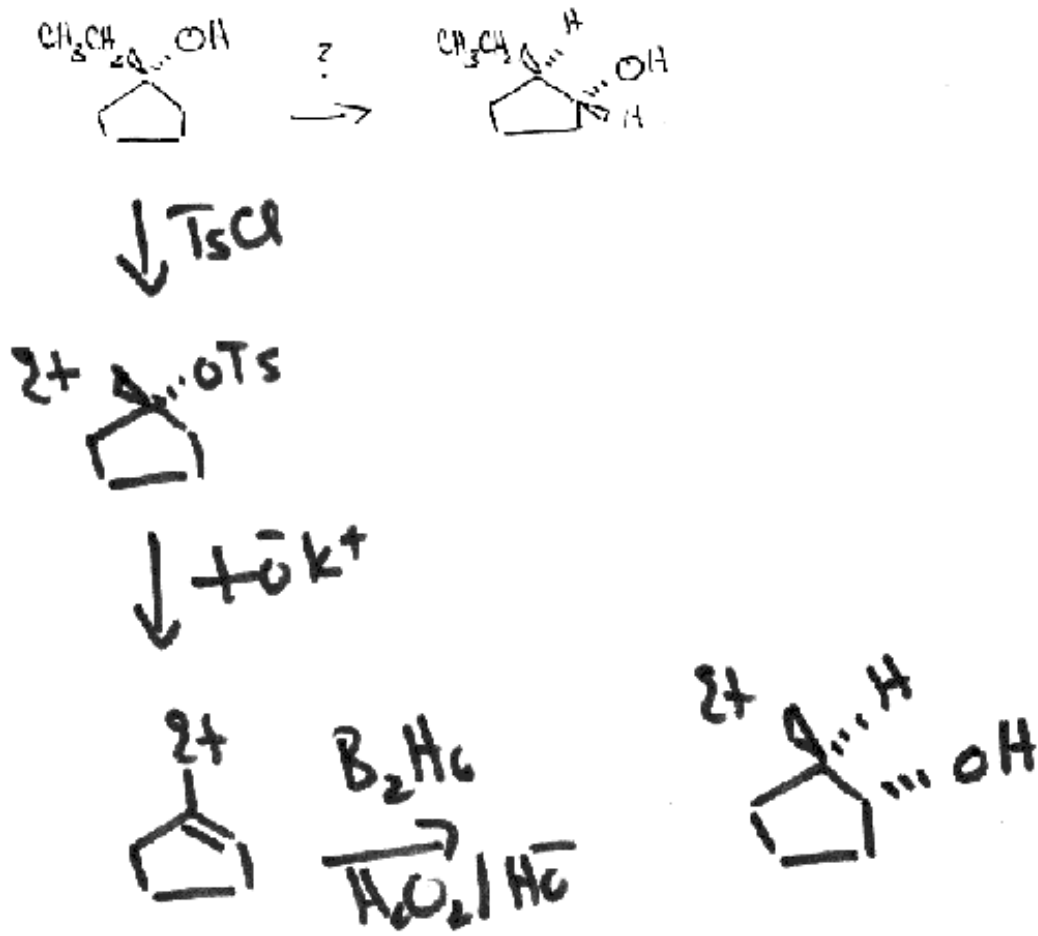
enantiomers  
optically active

These are diastereomers

7. (10 pts) There are 2 isomers formed in the following reaction. What are they & how are they formed?

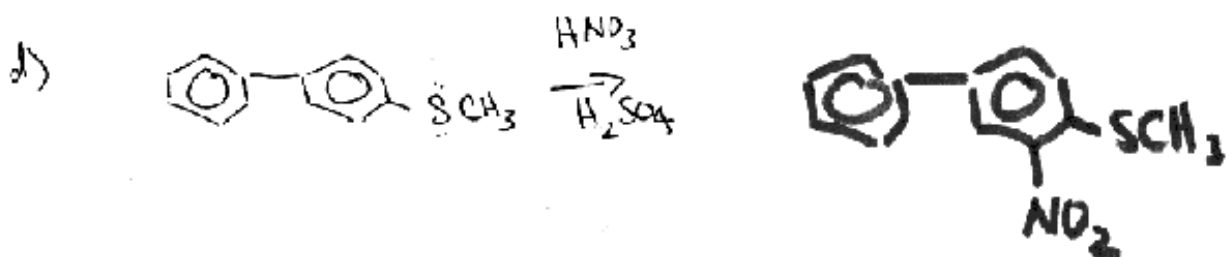
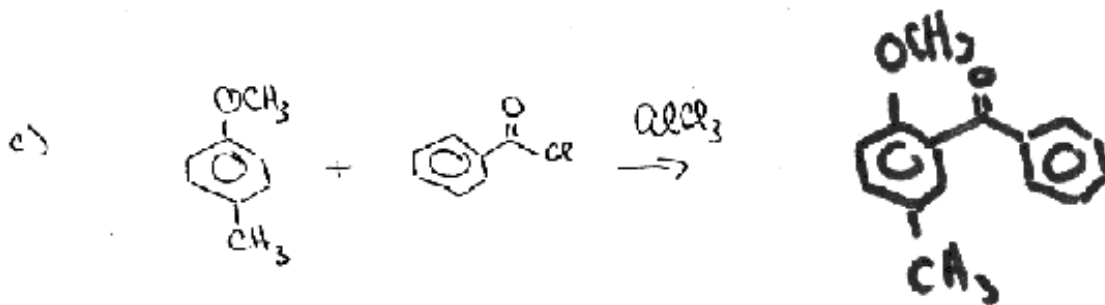
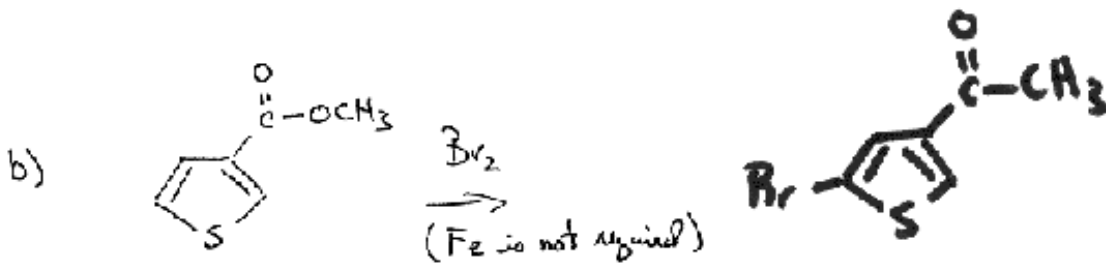
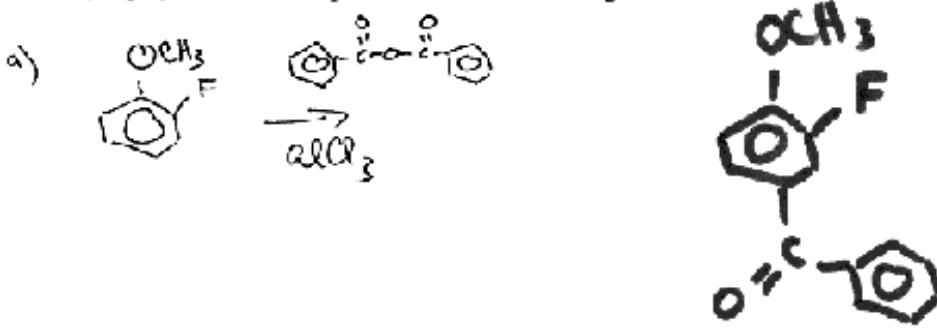


8. (10 pts) Devise a synthesis to carry out the following transformation. Use any reagents you like.

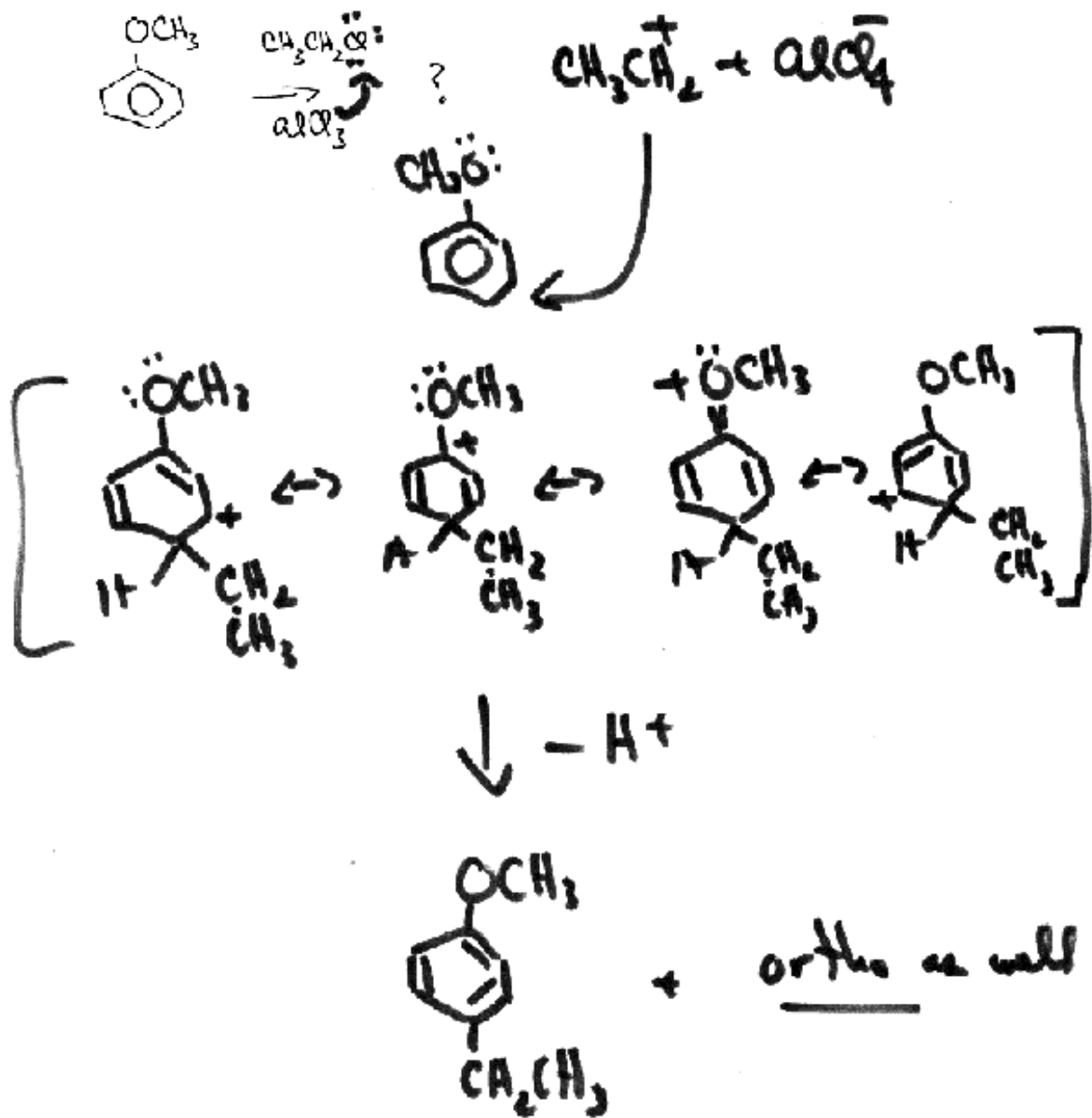




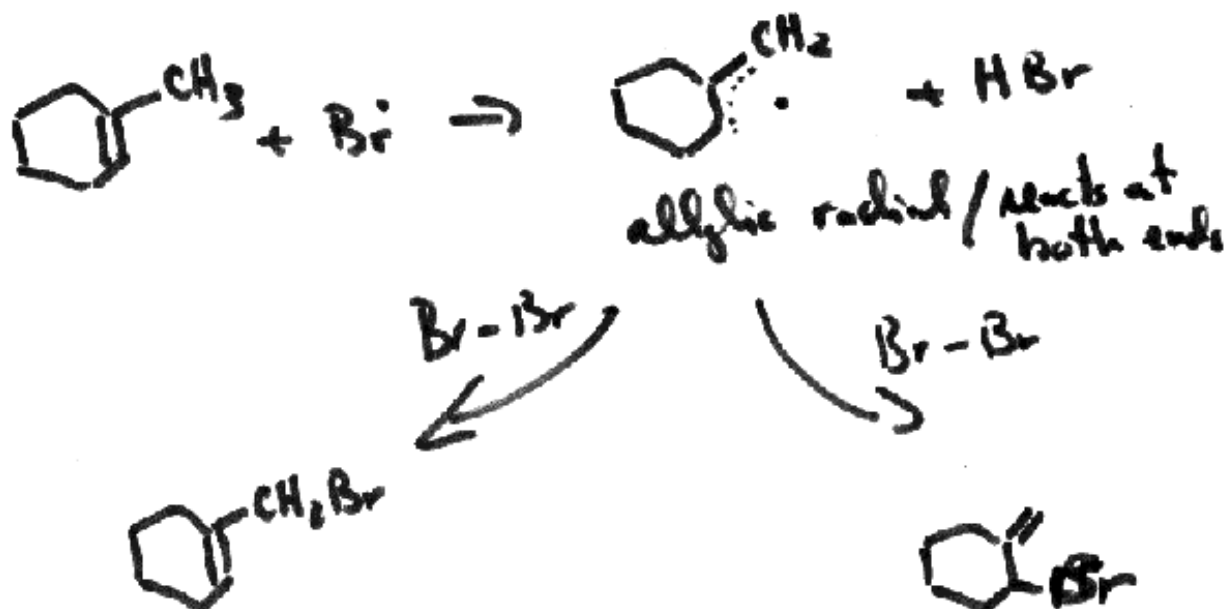
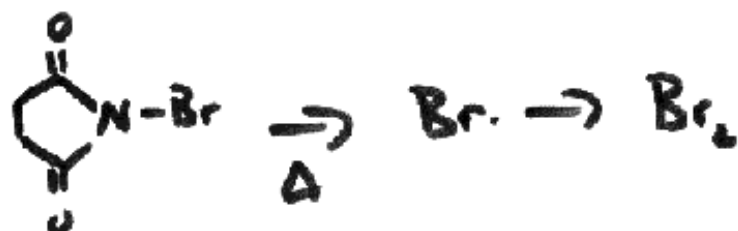
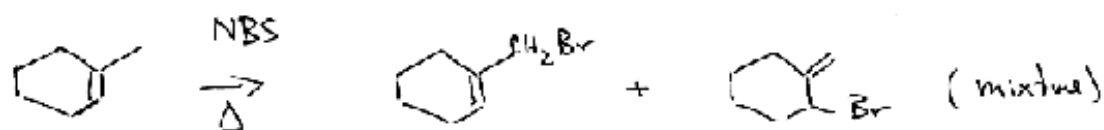
9. (20 pts) What are the products of the following reactions?



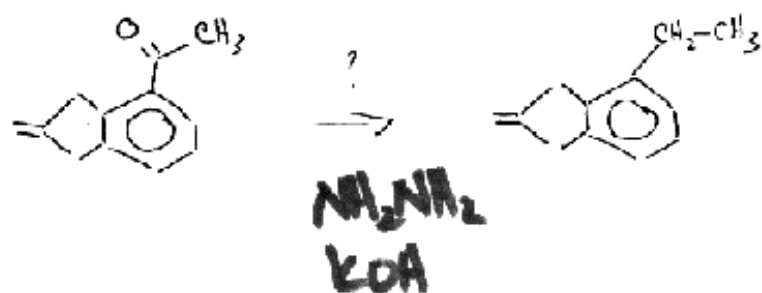
10. (10 pts) What is the product of the following reaction? What is the mechanism by which it goes?



11. (10 pts) What is the mechanism of this reaction?



12. (10 pts) Devise a synthesis to carry out the following transformations. Use any reagents you like. [Careful]



Wolff Kishner is best reducing scheme.

The Clemmensen Reduction uses  $\text{HCl}$

~~acid~~ which will isomerize the double bond.

13. (10 pts) What is the product in following reactions? What is the mechanism by which they go?

