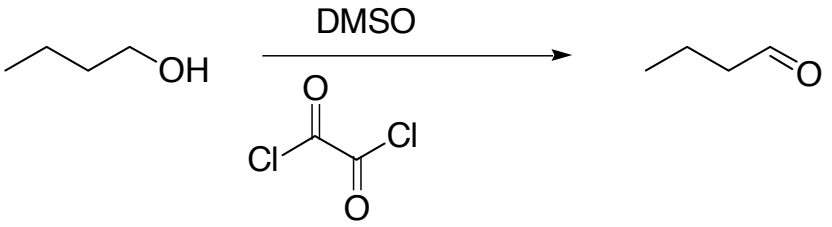
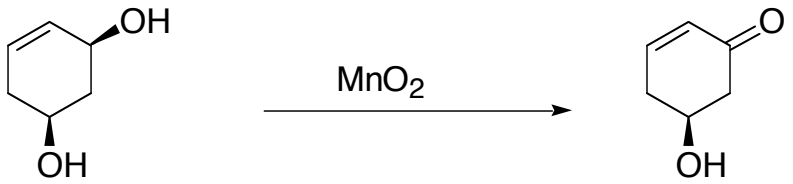
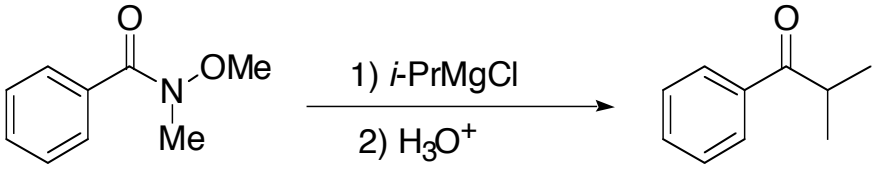
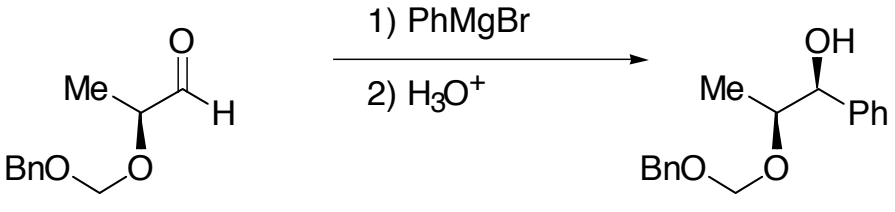
Chem 634 March 4, 2004
Exam 1 Practice Questions Prof. Fox
1.5 hours

1. Provide structures of the expected products of the following reactions. (5 points each)

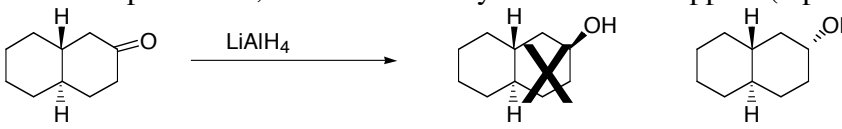




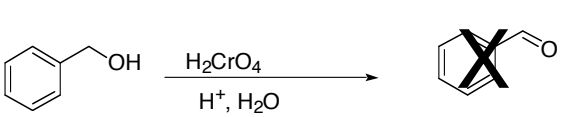




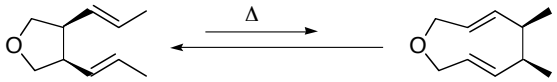
2. The following reactions would NOT proceed as follows. Provide a detailed explaination, and show exactly what would happen. (5 points each)



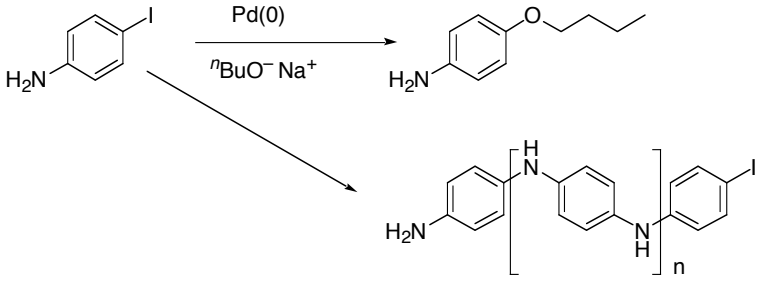
axial delivery of hydride by LAH



over oxidation under aqueous conditions

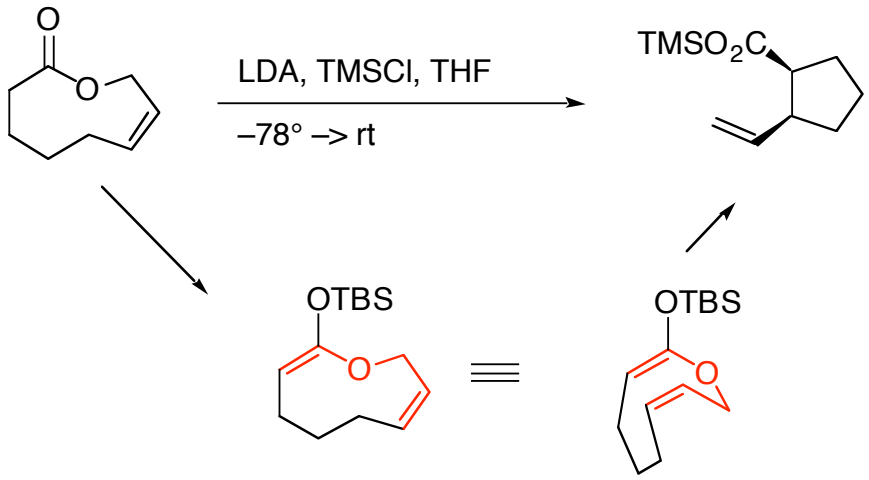


equilibrium is in the opposite direction



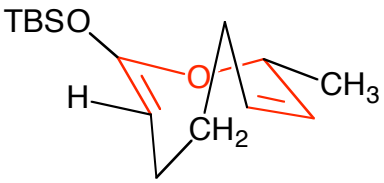
Incompatible functional group: since amines can react as nucleophiles in Pd(0) cross coupling chemistry, the formation of polyanilines will be a competing side reaction

3. Provide a mechanism that explains the stereochemical outcome of the following reaction. Your answer must include a detailed transition state model. (20 points)



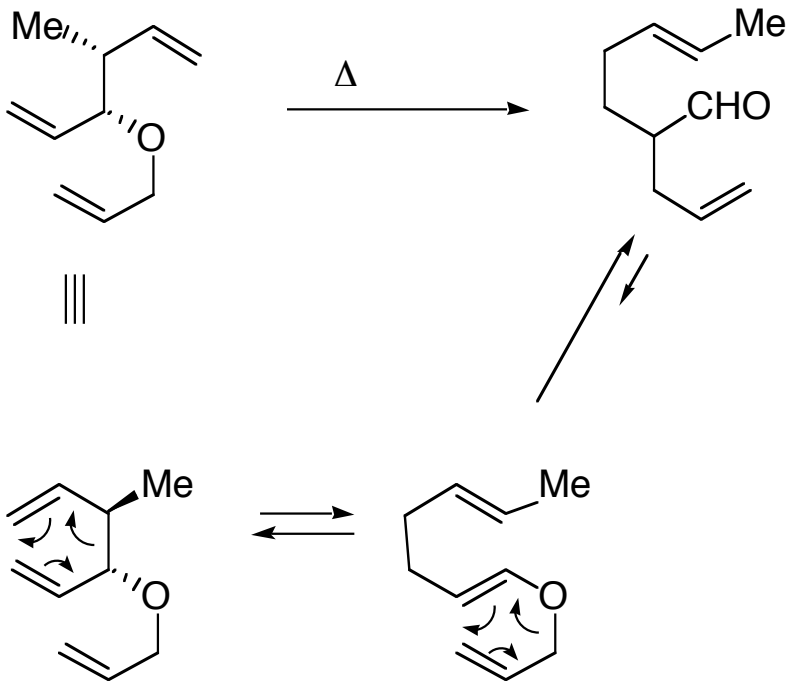
boat TS

NOTE that a chair TS is impossible here

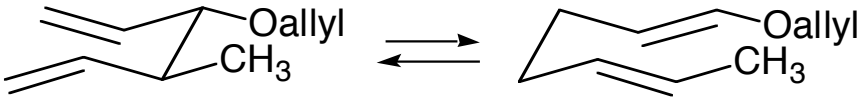


Note the need for distorted
bond angles/absurd bond legnths
Make a model!

4. Provide a detailed arrow pushing mechanism. Be sure that your answer includes a detailed model that explains the double bond stereochemistry. (20 points)



explanation of double bond stereochemistry



5. Outline a multistep synthesis (20 points)