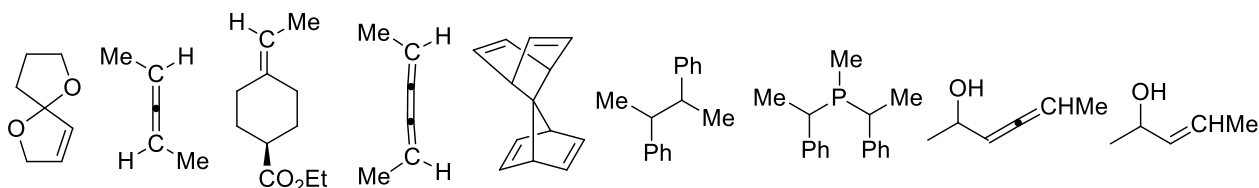
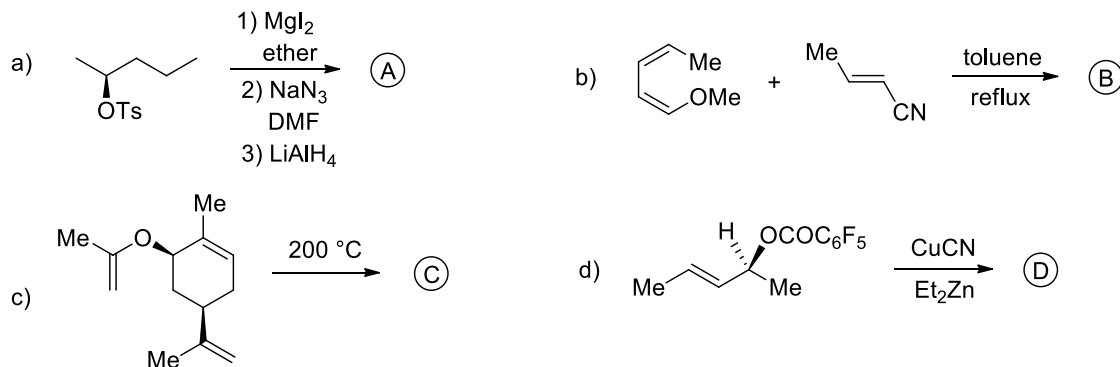


First Problem Set for OC I Part I (10.11.2015) Prof. Paul Knochel

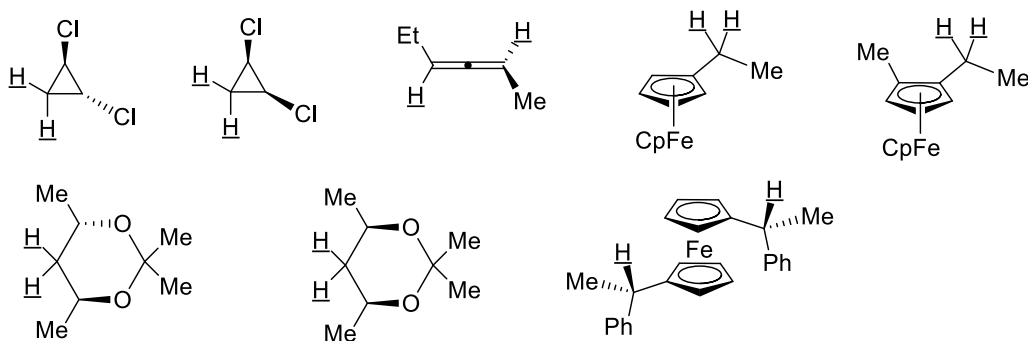
1) Please give the number of stereoisomers as well as stereochemical conformation (enantiomer or diastereomer) for the following compounds. Which compounds are chiral?



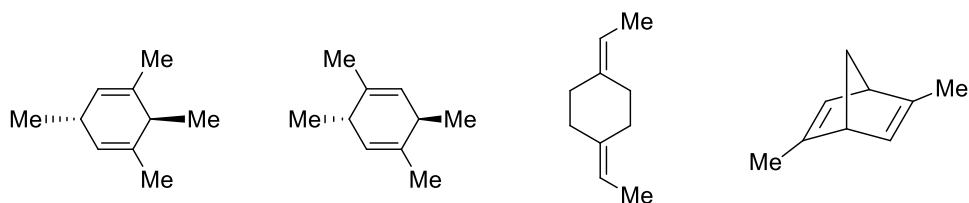
2) Please give the products of the following transformations:



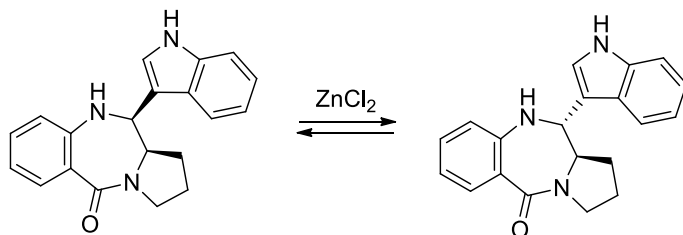
3) Please classify the marked protons (homotop, enantiotop, diastereotop) for the following compounds:



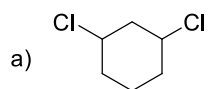
4) Please give the number and stereochemical conformation of the mono-epoxydation products for the following compounds:



5) In the presence of ZnCl_2 the following molecule was epimerized which means two diastereoisomers were formed. Please give a possible mechanism for the epimerisation.

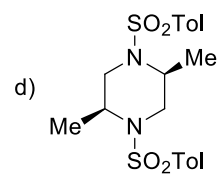


6) Draw the most stable conformation for the following molecules:

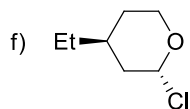


b) adamantane

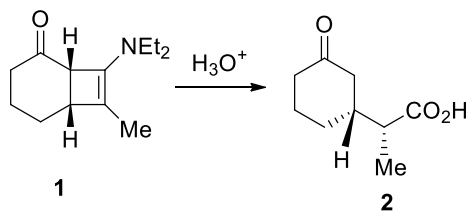
c) *cis*-decaline



e) *trans*-decaline



7) Explain the resulting stereochemistry for the following reactions:



a) Give the *R,S*-nomenclature for product **2**.

b) How would you prepare **1** starting from cyclohexenone and $\text{Me}-\text{C}\equiv\text{C}-\text{NEt}_2$?