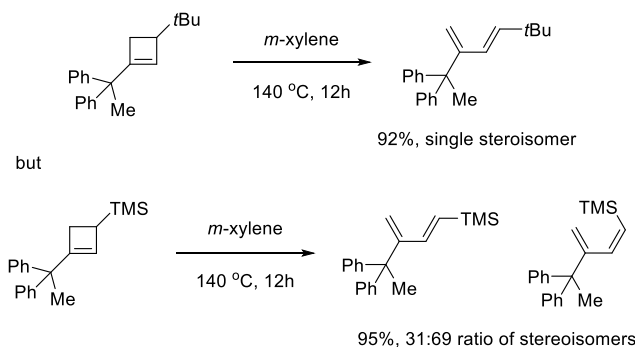


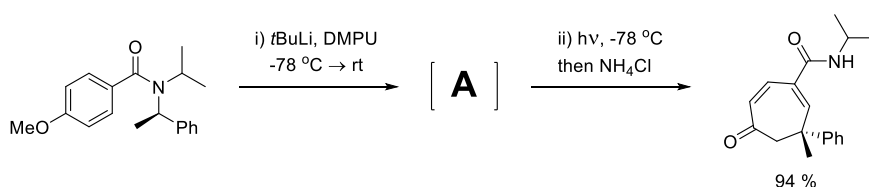
## Group Meeting Problems - Darren Poole - 151013

Please attempt the following problems, identify intermediates **A**, **C**, and **D**, suggest mechanisms, and rationalise stereo/regiochemistry where appropriate.

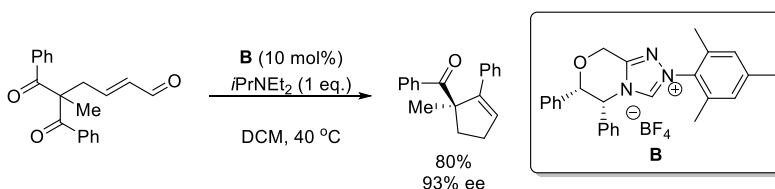
- 1) Provide a rationale for the differing modes of torquoselectivity for the ring opening of the two different cyclobutenes. (*Angew. Chem. Int. Ed.* **2001**, p189)



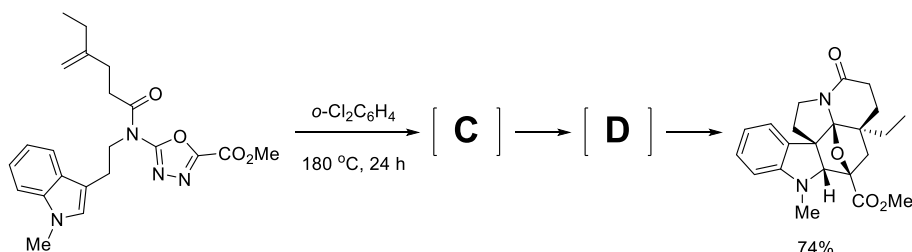
- 2) Provide a mechanism for the following transformation and identify intermediate **A**. (*J. Am. Chem. Soc.* **2003**, p9278)



- 3) Provide a mechanism for the following transformation. Attempts at rationalising the stereoselectivity (without copying the model straight out of the paper...) will earn extra Brownie points. (*J. Am. Chem. Soc.* **2007**, p10098)



- 4) Provide a mechanism, identify intermediate **C**, and explain the observed stereochemistry. (*J. Am. Chem. Soc.* **2002**, p11292)



- 5) Provide a mechanism for the following reaction. (*Org. Lett.* **2013**, p4996)

