

CHEMISTRY 172Q

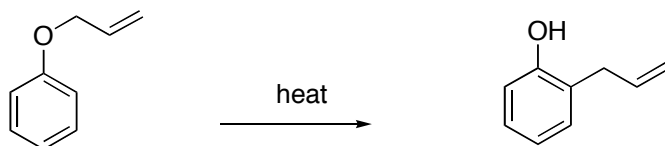
WORKSHOP 11

APRIL 9, 2007

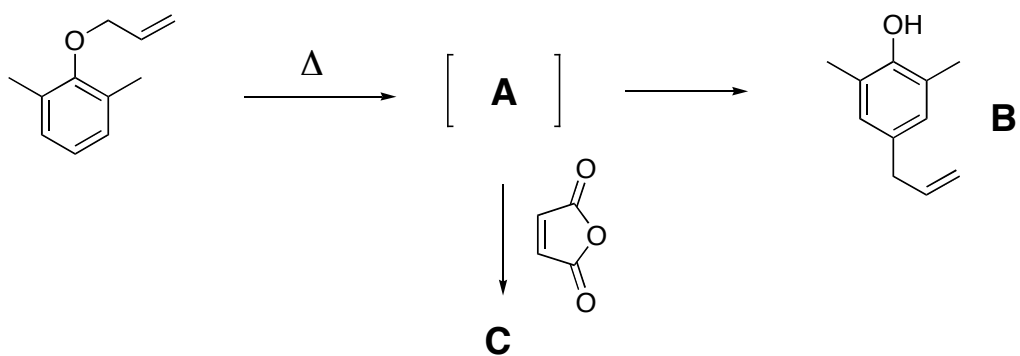
PERICYCLIC REACTIONS II

1. Give a mechanism for each reaction below. Name the pericyclic process and identify the driving force for the reaction in each case.

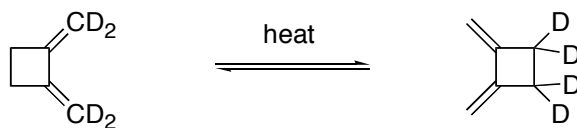
a.



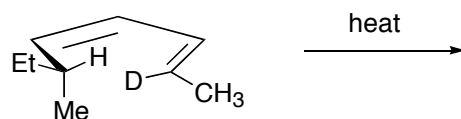
b.



c.

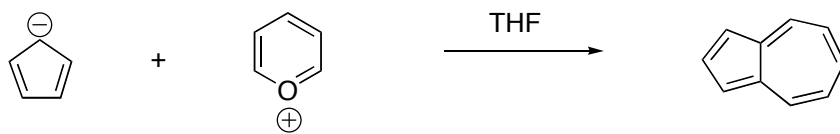


2. Roth designed the reaction below as a test to confirm the stereoselectivity predicted by orbital symmetry.
- Does theory predict a suprafacial or an antarafacial reaction for the [1,5]-hydrogen shift?
  - Given this prediction, what products are expected in this experiment?
  - What products are *not* expected to be present in the product mixture (i.e. those arising from “forbidden” pathways)?



(FYI: the researchers results were consistent with the predictions of orbital symmetry!)

3. Two pericyclic reactions are involved the formation of azulene, shown below. Give the mechanism, name the pericyclic processes, and explain why azulene is a brilliant blue color.



4. Give the mechanisms of the following pericyclic reactions and give the structures of **A**, **B** and **C**.

