Chem 332
Exam 2
2008
Prof Fox
50 minutes
100 points

Show your work in detail

Write your name on every page

Name____________________________________________
1. Provide reagents. More than one step may be required. Mechanisms are not needed. (5 points each)
2. Consider the electrocyclic closure of compound 1 to give 2.

Using orbital symmetry considerations, predict if this reaction will proceed via conrotatory or disrotatory electrocyclic ring closure. Use molecular orbital theory to explain your answer.
3. Heating compound 3 leads to isomeric products. Circle the structure below that is NOT FORMED when 3 is heated. Circle only one answer. You do not need to provide an explanation for your answer.
4. Consider the thermal cycloaddition depicted below

Would you expect this to be a concerted process under thermal conditions? Explain in detail using an argument that is grounded in molecular orbital theory.
5. Provide a detailed arrow pushing mechanism. Your answer does NOT require molecular orbital analysis. Your mechanism must account for the stereochemistry of the product.
Scratch paper
Scratch paper
Scratch paper