Chem 332 Exam 2 2008 Prof Fox 50 minutes 100 points

Show your work in detail

Write your name on every page

Name_____

Chem 332, 2008, exam 2

Your Name_____

1. Provide reagents. More than one step may be required (5 points each) Mechanisms are not needed.





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Your Name_____

2. Consider the electrocyclic closure of compound 1 to give 2.

(25 points)



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

Your Name

(15 points)

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 NOT need to provide an explanation for your answer.



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Your Name_____

4. Consider the thermal cycloaddition depicted below

(25 points)

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.

Your Name_

(25 points)5. Provide a detailed arrow pushing mechnism. Your answer does NOT require molecular orbital analysis. Your mechanism must account for the stereochemistry of the product.



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