

Chem 332

Exam 2

2010

Prof Fox

50 minutes

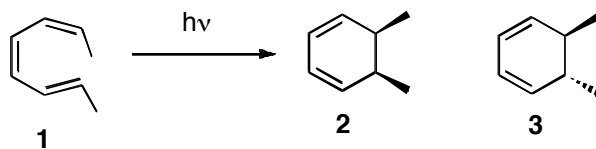
80 points

The exam is closed book

Write your name on every page

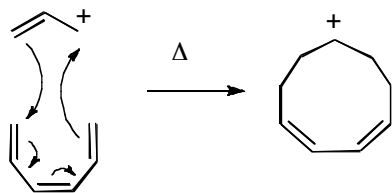
Name _____

1. Does the photochemical isomerization of **1** lead to compound **2**, compound **3**, or a mixture of both? Circle the correct product(s). Explain your answer in detail using an argument based in molecular orbital theory; a correct answer will predict if this reaction will proceed via conrotatory or disrotatory electrocyclic ring closure. (15 points)
NO CREDIT will be awarded for simply circling the correct product

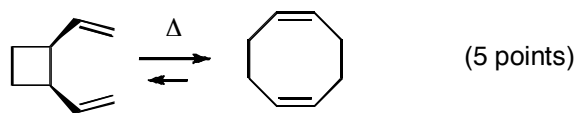


(25 points)

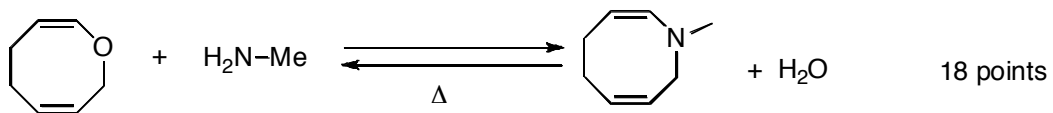
2. Consider the thermal reaction shown below. Would you expect this to be a concerted process under thermal conditions? Explain in detail using an argument based in molecular orbital theory.



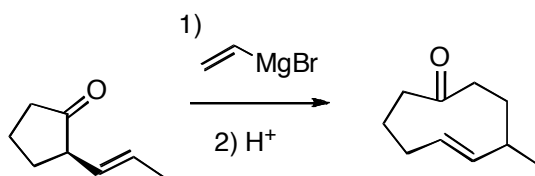
3. Provide a detailed arrow pushing mechanism. Your answer does NOT require molecular orbital analysis.



4. Provide a detailed arrow pushing mechanism. Your answer does NOT require molecular orbital analysis.



5. Provide a detailed arrow pushing mechanism. Your answer does NOT require molecular orbital analysis.



17 points

Scratch paper