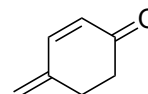
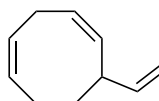
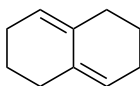
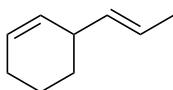
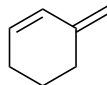
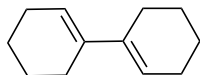
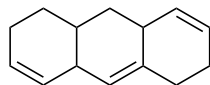
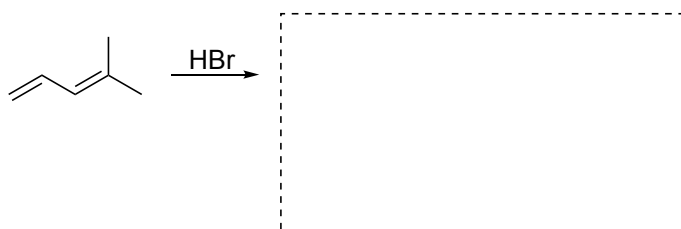


CEM 252 (730)
Problem set 2 (chapter 20-21)

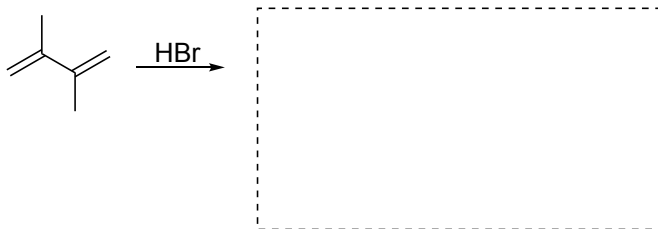
1. Circle the **conjugated pi system** of the compound listed below:



2. Consider the following two dienes. When treated with HBr, one of the diene yields **four** products, while the other diene yields only **two** products. Propose the corresponding **mechanism** to explain why.

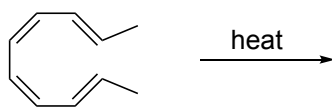
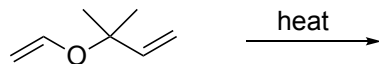
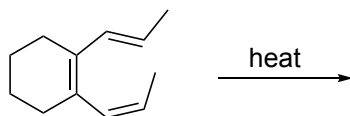
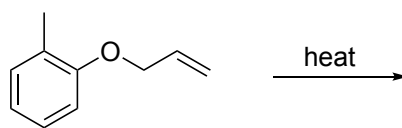
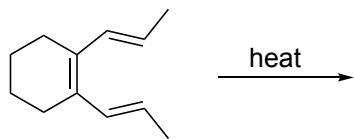


Mechanism:

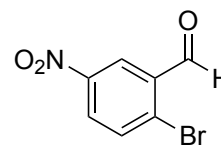
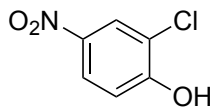
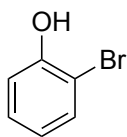
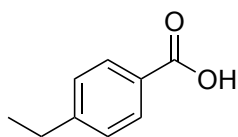


Mechanism:

3. Predict the **major** product of the following reactions. (To better vision the configuration of the product, draw out the HOMO of the pi system of the electrocyclic rxns)



4. Provide a **systematic name** for each of the following compounds.



5. Draw a **structure** for each of the following compounds.

ortho-Dichlorobenzene

Anisole

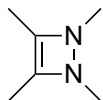
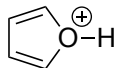
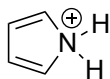
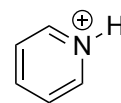
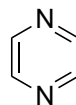
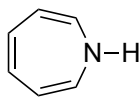
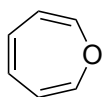
meta-Nitrotulene

Aniline

2,4,6-Tribromophenol

para-Xylene

6. Identify each of the following as **aromatic**, **nonaromatic**, or **antiaromatic**, explain your choice.



7. How many signals do you expect in the ^{13}C NMR spectrum of each of the following compounds?

