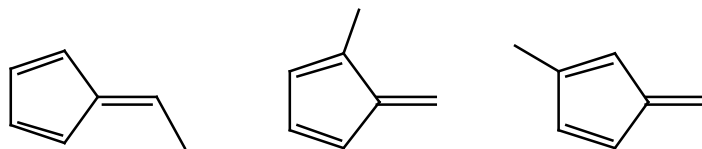
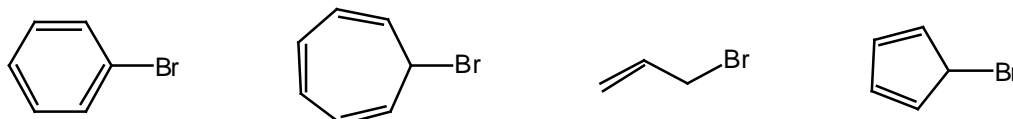


Problem Set #2
CH242-2002S

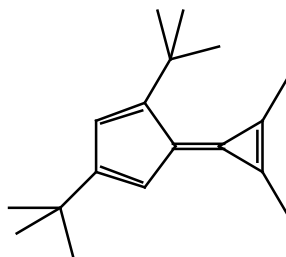
[1] Pick the most acidic compound among the following and explain your choice.



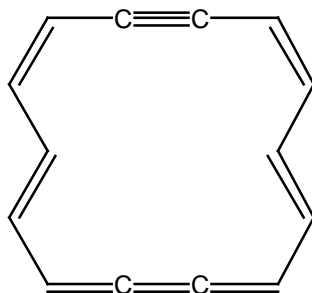
[2] Which of the following compounds would ionize most rapidly to form a carbocation? Explain.



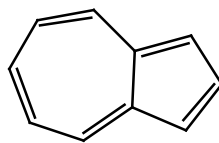
[3] In the following compound, the barrier to rotation about the double bond connecting the two rings is unusually low. Explain. (*Hint: This compound also has an unusually large dipole moment for a hydrocarbon!*)



[4] Sketch the bonding orbitals in the following compound clearly showing their orientation relative to one another. Indicate whether this compound is aromatic or not. Suggest how you might use NMR spectroscopy to support your answer.



[5] (a) Explain why azulene has an unusually large dipole moment ($\mu = 0.80$) for a hydrocarbon.
(b) If azulene is subjected to electrophilic aromatic substitution, which ring do you think will be attacked by the electrophile? On what position?



Azulene