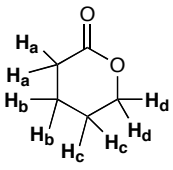
Chem 342

Quiz 01 - KEY
06 February 2004

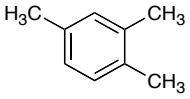
3 Points Each. Please mark your answers on the scantron sheet. You may keep this copy.

1. In the proton NMR of the following molecule, which hydrogens will be furthest downfield (furthest to the left on the spectra)?



a) H_a b) H_b c) H_c **d) H_d**

2. How many different carbons would be observed in the C-13 NMR of the following compound?



a) 5 b) 6 c) 7 **d) 9**

3. The energy to excite an electron from a pi-system to an excited state lies in what part of the electromagnetic spectrum?

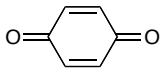
a) Radio Frequencies **b) Ultraviolet** c) Microwave d) Infrared

4. Which of the following molecules would be Aromatic?

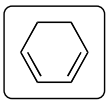
a) 

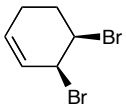
b) 

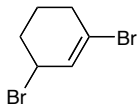
c) 

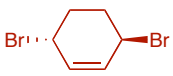
d) 

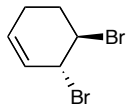
5. Which product is the result of a 1,4-addition of Br_2 to the following diene?



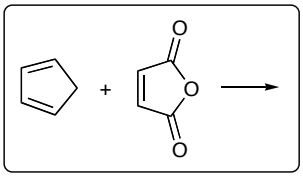
a) 

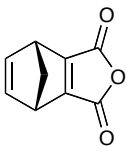
b) 

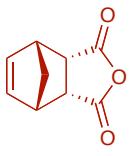
c) 

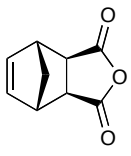
d) 

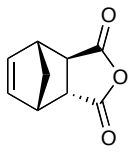
6. What is the major product of the reaction of cyclopentadiene with maleic anhydride?



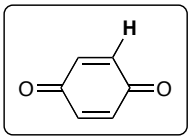
a) 

b) 

c) 

d) 

7. What will the NMR signal for the following indicated proton look like?



(note that the molecule is symmetric, thus the neighboring H is identical. They do not split each other, just like with Cl-CH_2-CH_2-Cl.

a) a singlet b) a doublet c) a triplet d) a quartet