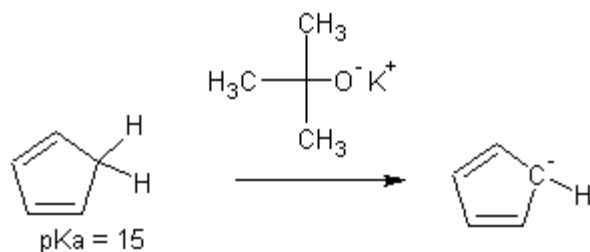


### Test 1 Review – 7 February 2009

Account for the ease by which a proton is lost in cyclopentadiene:

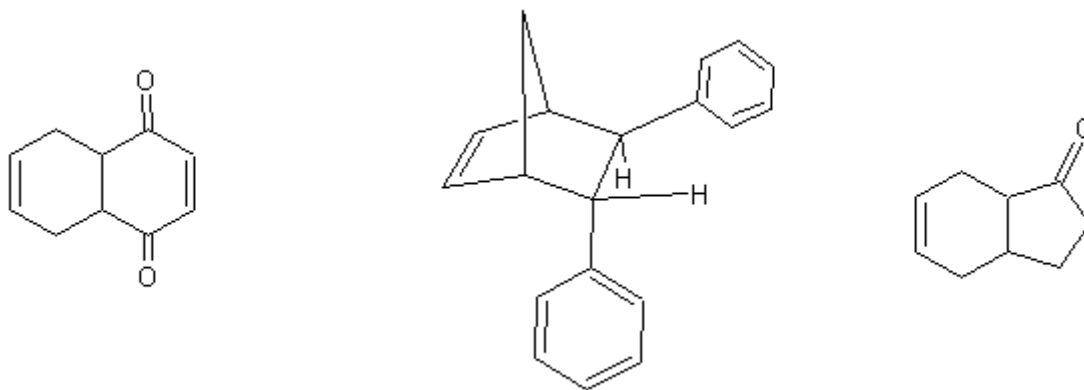


Which  $^1\text{H}$  NMR spectrum description corresponds to which molecule?

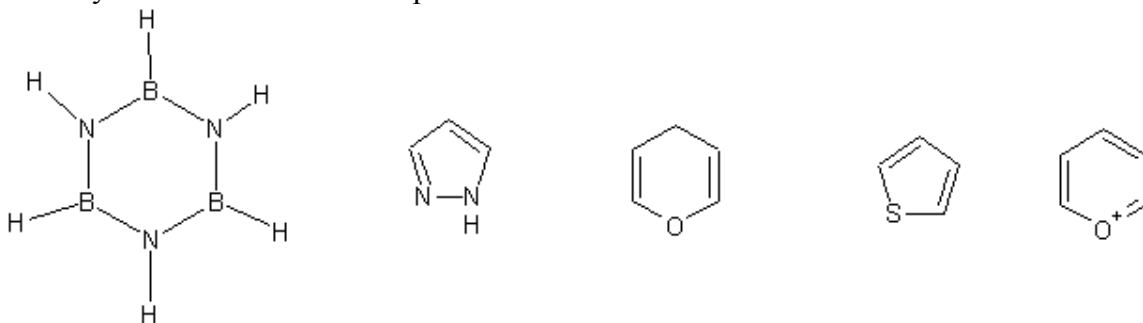


Spectra: **a)** 7.34 (singlet) **b)** 6.78 (singlet)

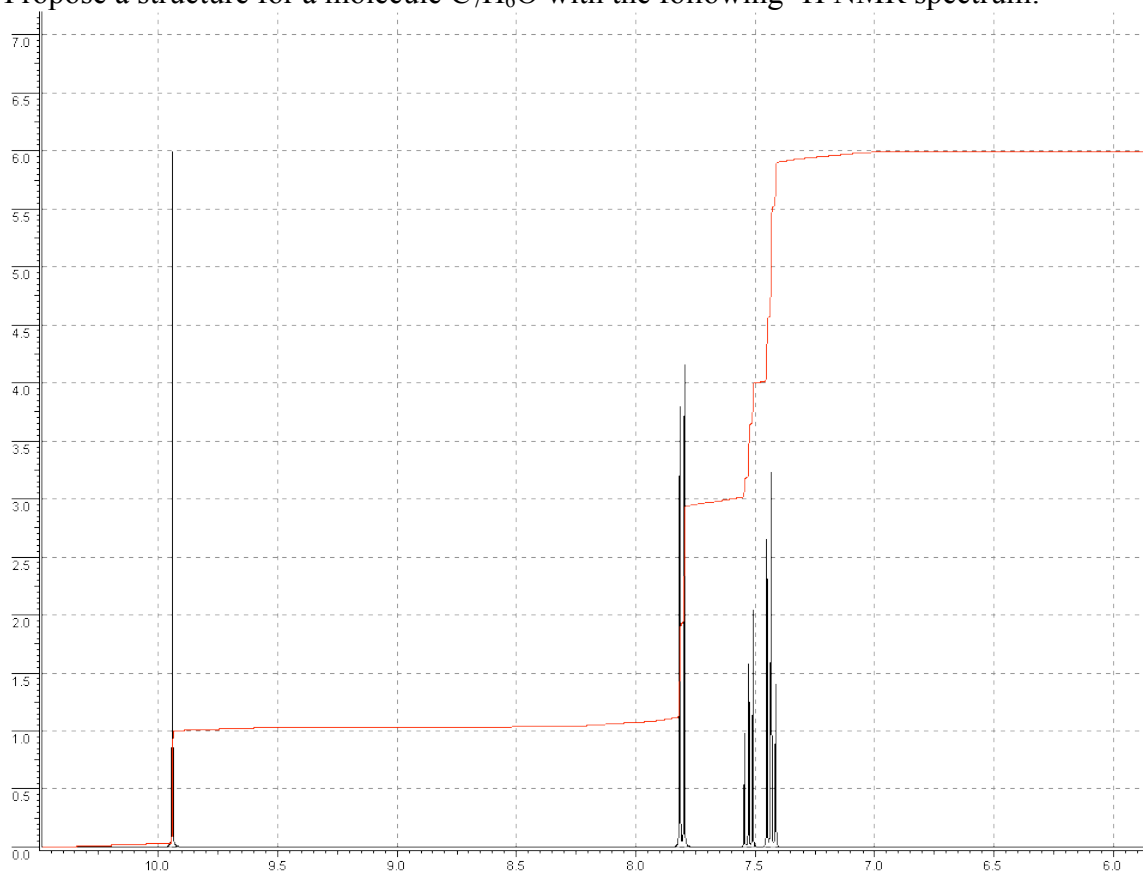
What reagents would you need to generate the following Diels-Alder products?



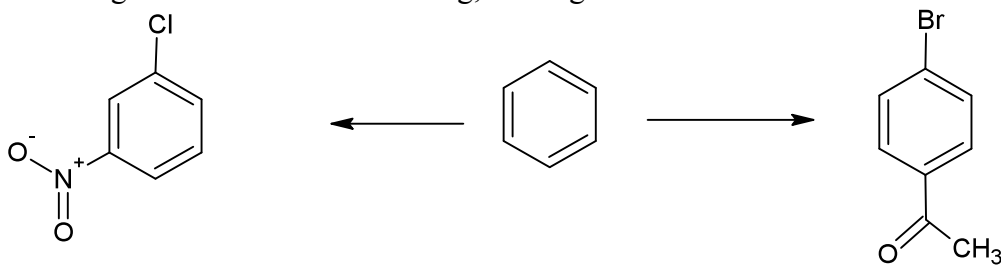
Identify all of the aromatic compounds:



Propose a structure for a molecule  $C_7H_6O$  with the following  $^1H$  NMR spectrum:



How might one obtain the following, starting with benzene?



Identify the following : 1,2-addition product, 1,4-addition product, thermodynamically-favored product, kinetically-favored product. What conditions cause each product to dominate?

