

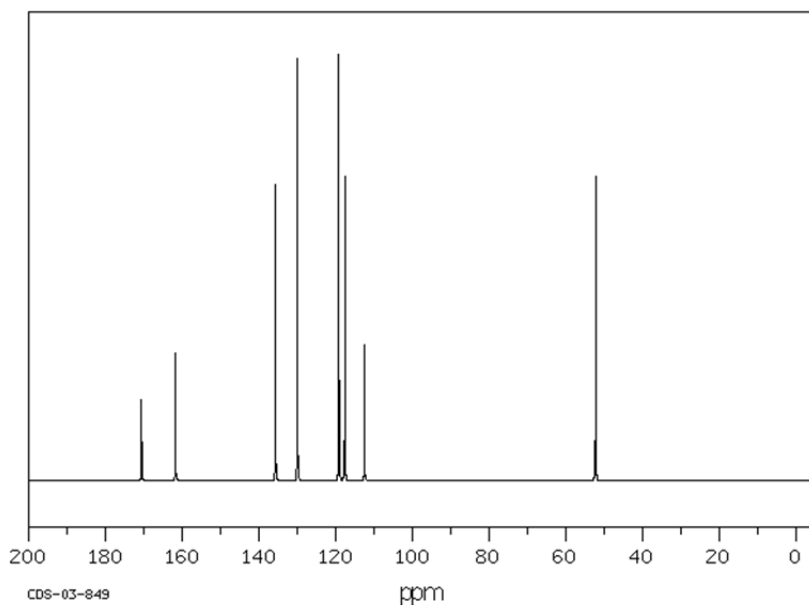
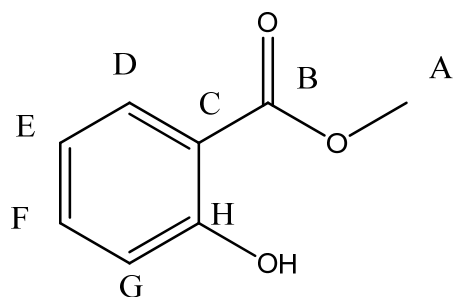
S343 Quiz 6
12/4/14

Name _____

AI (or Lab Section) _____

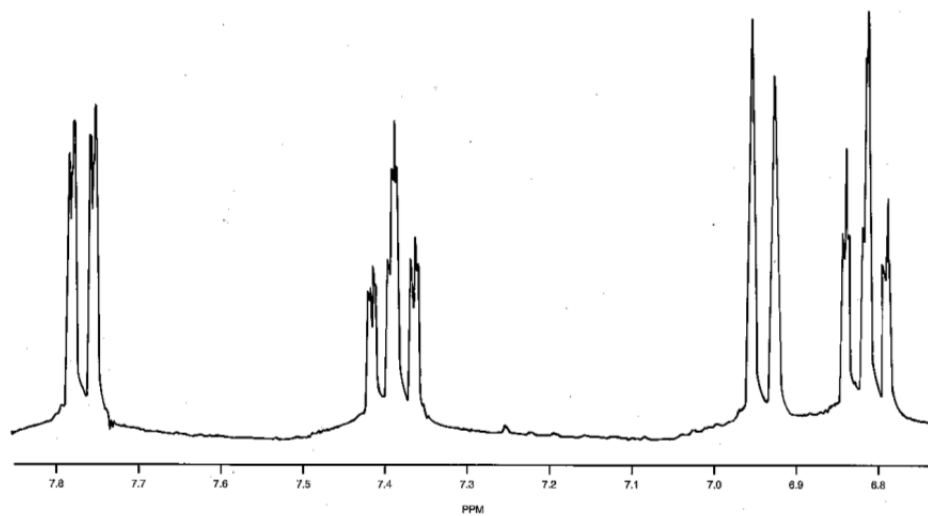
1. (8pts) The carbon-13 nMR of the compound below has 8 signals. Match the frequency of each signal to the appropriate letter on the structure. Use the spectra given on the next page to help. Be sure to consider resonance effects on the chemical shift in the proton NMR. (Note: the carbon peaks at 169 and 161 ppm do not show up on the HETCOR scale.)

Shift (ppm)	letter
52	
112	
116	
118	
129	
136	
161	
169	

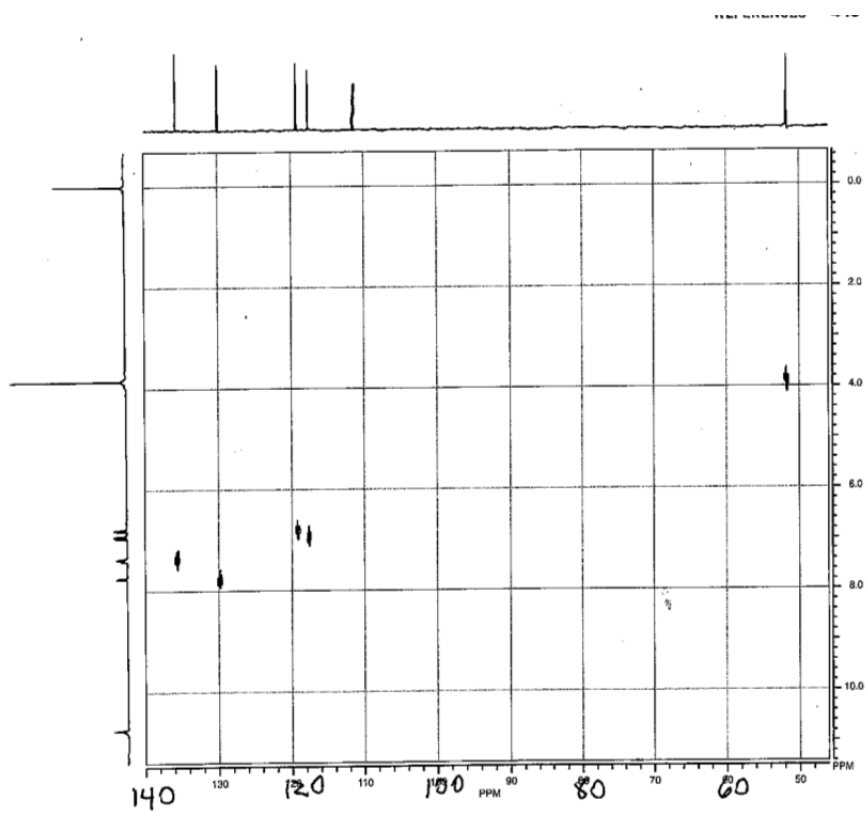


Problem 1 continued.

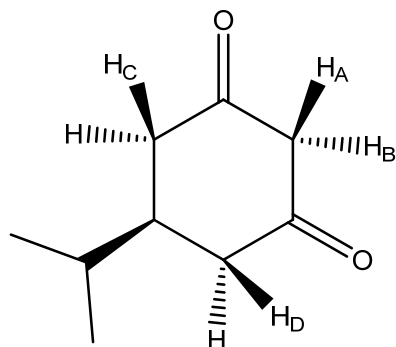
The expanded proton spectrum (7.8 - 6.8 ppm)



HETCOR



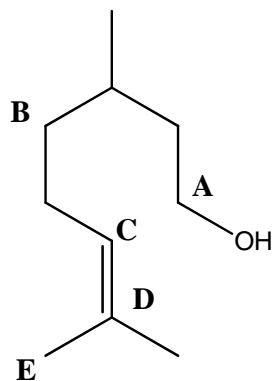
2. (6pts) The protons labelled A and B in the compound you made in the multistep synthesis are expected to give two proton signals that are both doublets. Instead, they give what appears to be only one signal, perhaps a distorted quartet. Explain why this signal is observed.



Are the protons labelled C and D in this compound chemically equivalent? _____ Explain:

Are the protons labeled C and D in this compound magnetically equivalent? _____ Explain:

3. (6pts) A. Fill in the boxes in the table below with the letters A-E that corresponds to each C-13 signal's chemical shift. The C-13 NMR and DEPT 135 of the compound are given on the next page.

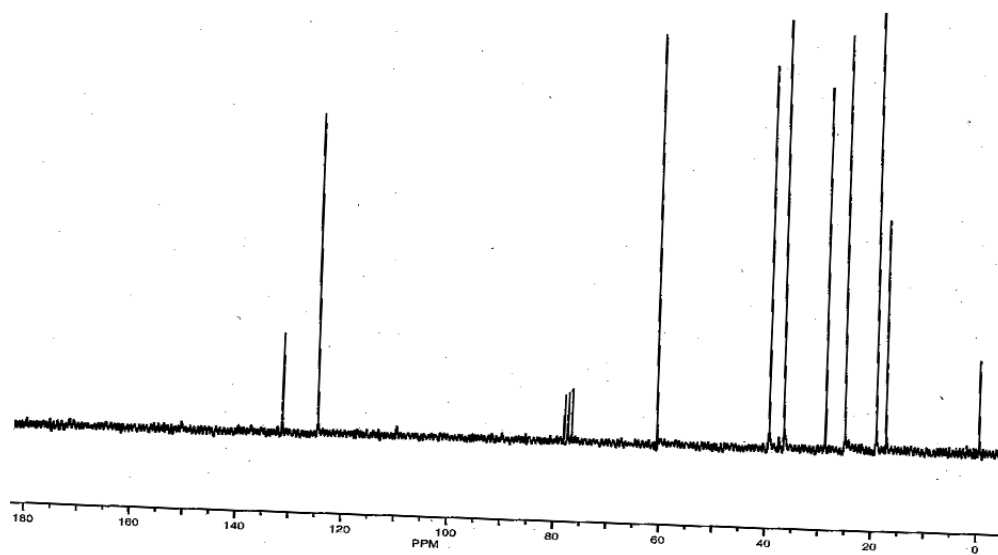


Shift (ppm)	Letter
18	
38	
60	
125	
131	

B. The carbon NMR of this compound only shows 9 peaks, but based on the structure, it might be expected to have 10 peaks. Refer to the data to explain why only 9 peaks are observed in the C-13 spectrum:

Problem 3 continued.

C-13 Spectrum



DEPT-135 spectrum

