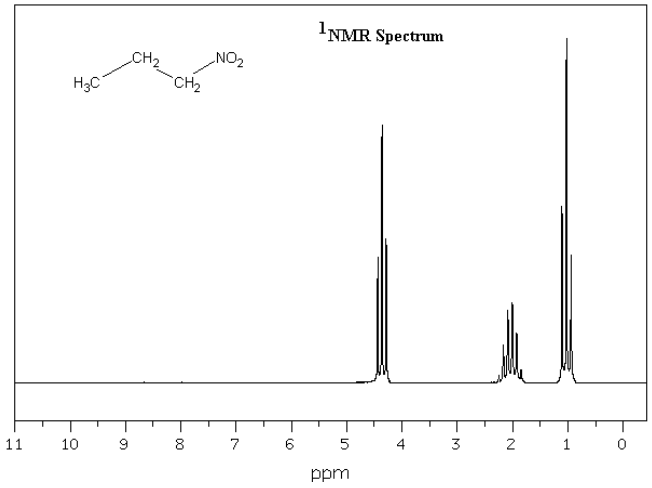
Pre-lab 6: Lab- NMR assignments Name:_____

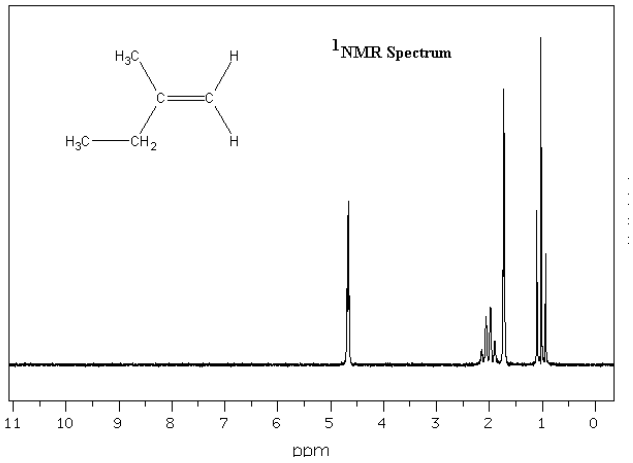
Draw the expanded molecular structure if necessary and assign the Proton NMR frequencies in the following Spectra: (use correlation charts or peaks values given at the end of the assignment).

1) **Nitropropane** (10 pts) **Proton NMR**

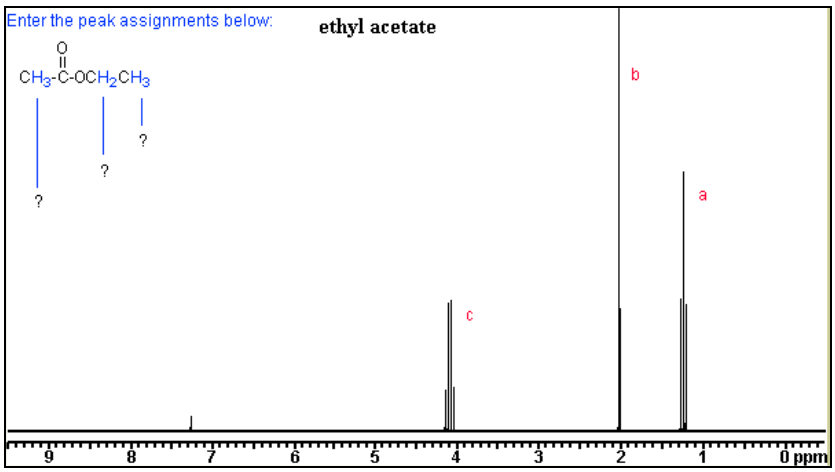


2)

2) 3-methyl-1-butene (10 pts) **Proton NMR**

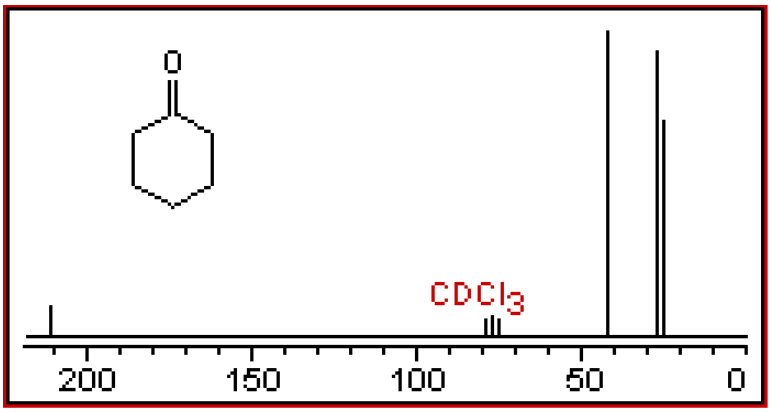


3) ethyl acetate (10 pts) **Proton NMR**

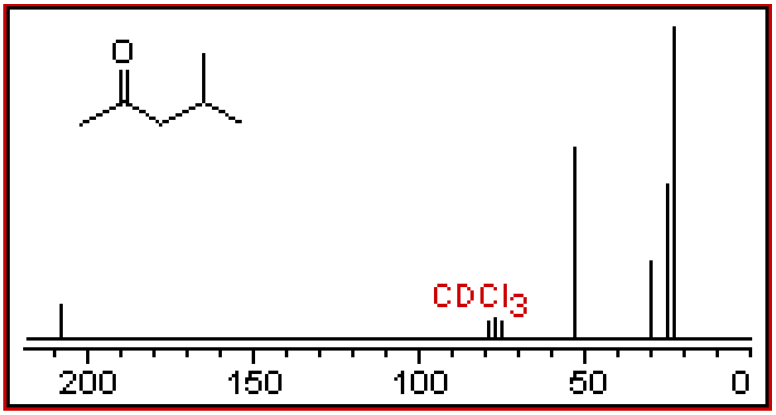


Draw the expanded molecular structure if necessary and assign the decoupled **Carbon-13 NMR** frequencies in the following Spectra: (use correlation charts or peaks values given at the end of the assignment). What peaks will show more structure in the coupled Carbon-13 NMR? What are their multiplicities (doublet, triplet, quartet etc.)

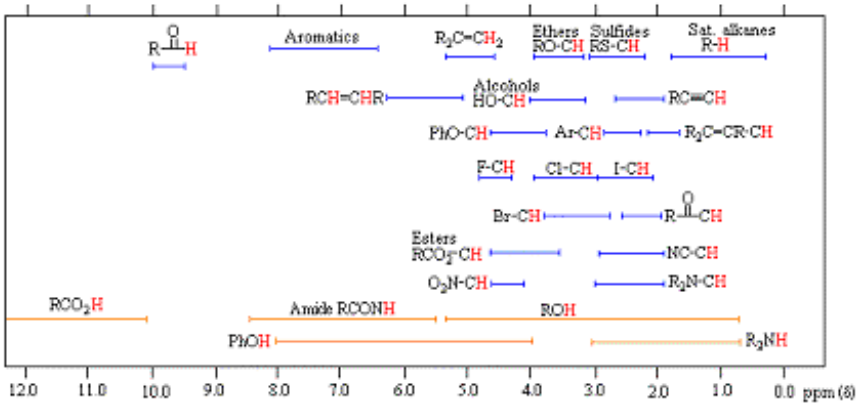
4) Cyclohexanone (10 pts) **^{13}C NMR decoupled**



5) 4-methyl-2-pentanone(10 pts) **^{13}C NMR decoupled**

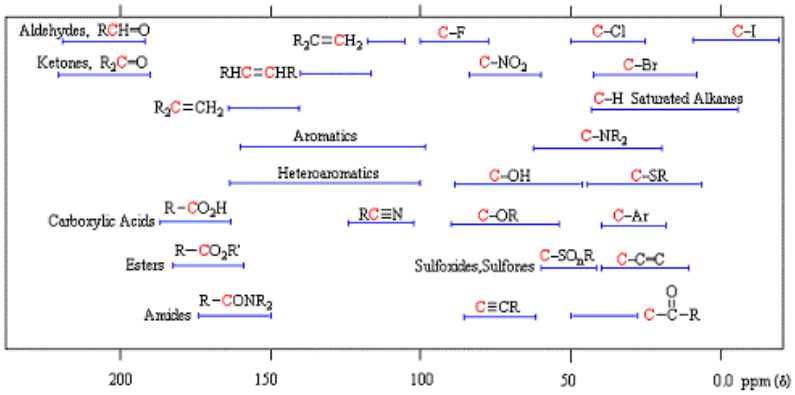


Proton Chemical Shift Ranges*



* For samples in $CDCl_3$ solution. The δ scale is relative to TMS at δ = 0.

^{13}C Chemical Shift Ranges*



* For samples in $CDCl_3$ solution. The δ scale is relative to TMS at δ=0.