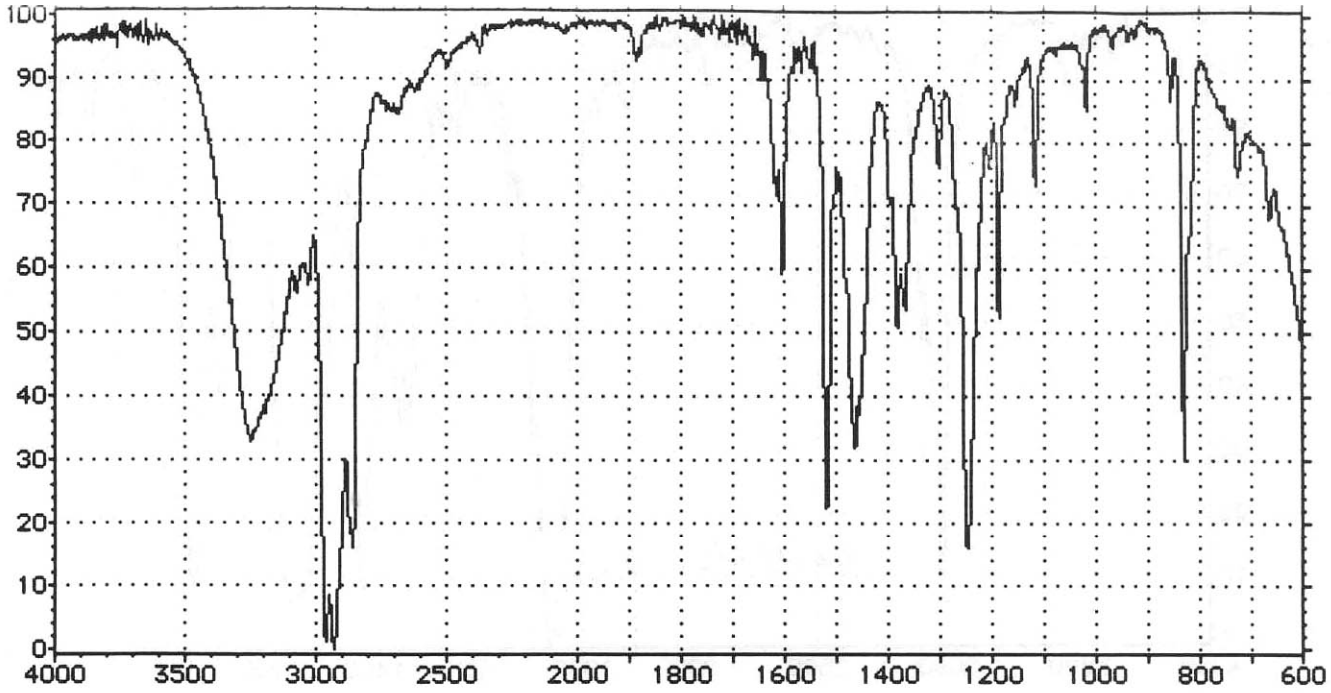
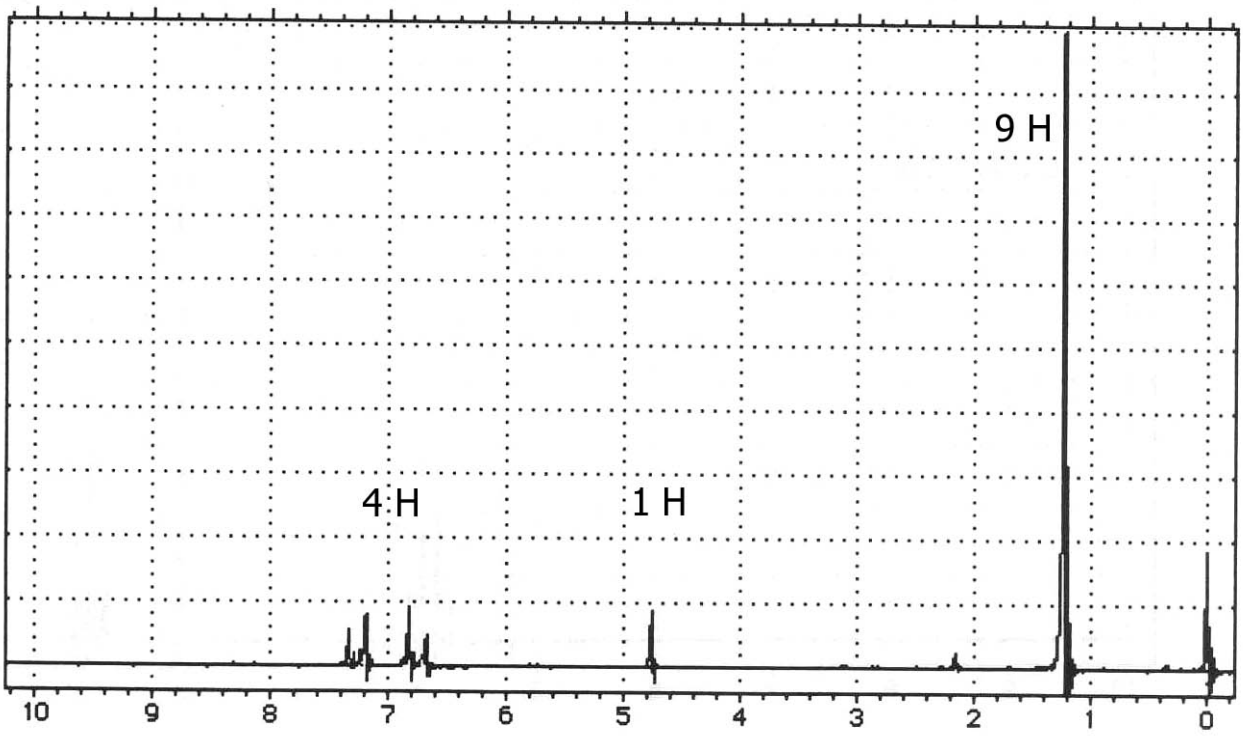
Identification of Organic Compounds Using IR and ^{1}H-NMR Spectroscopy

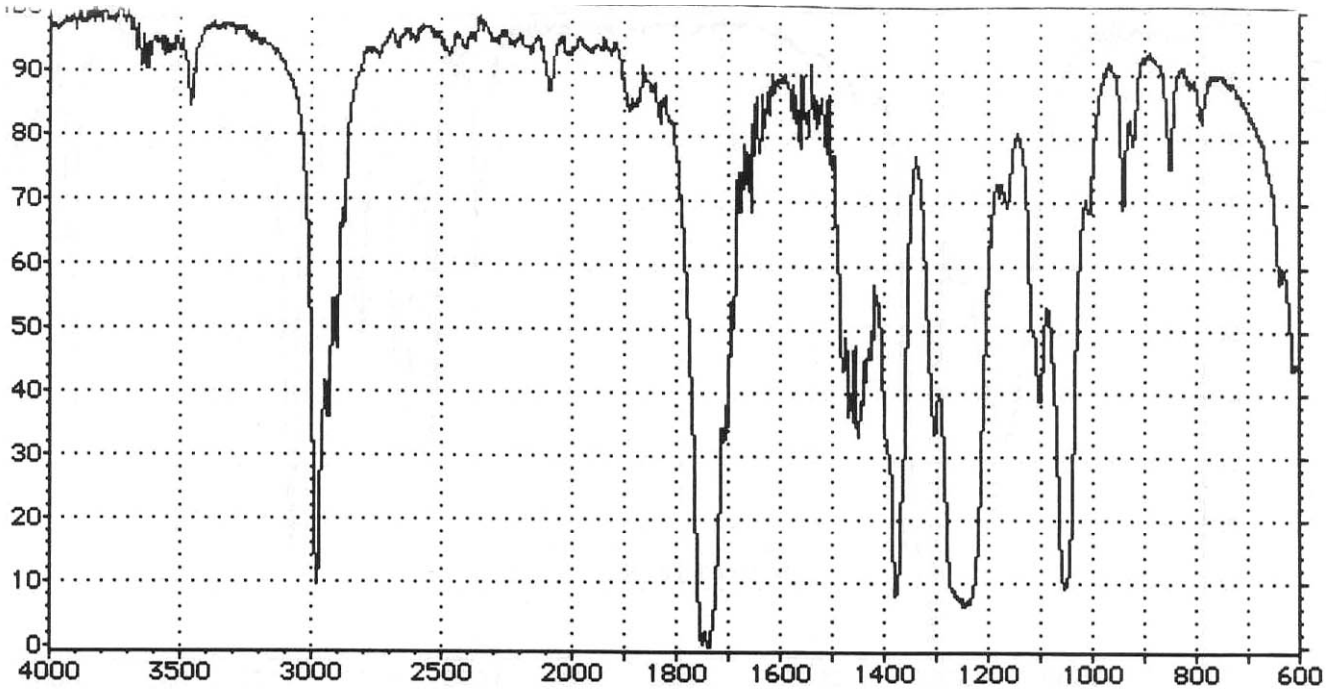
The following infrared and proton NMR spectra provide a good introduction to the use of these techniques for identifying organic compounds and their structures. The top spectra are IR and the bottom spectra are ^{1}H-NMR. Based on the spectra and the given molecular formula, write the structure of each compound.

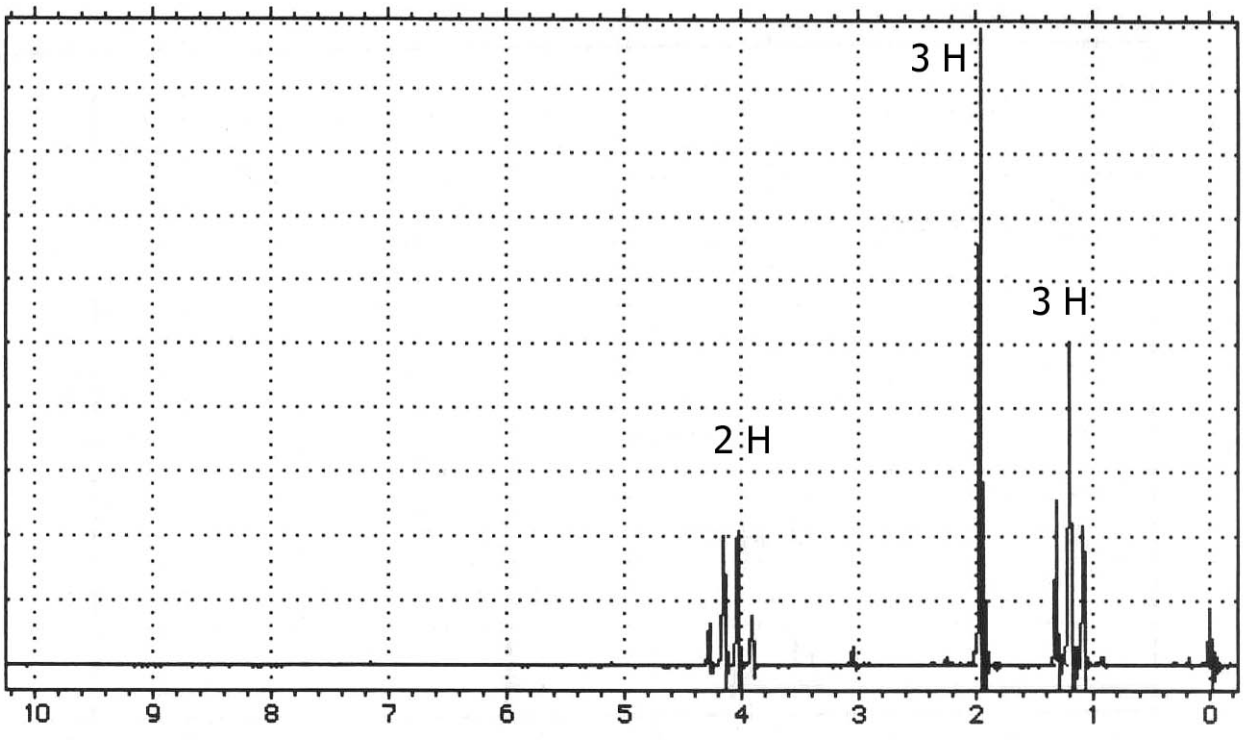
Compound 1, $C_{10}H_{14}O$



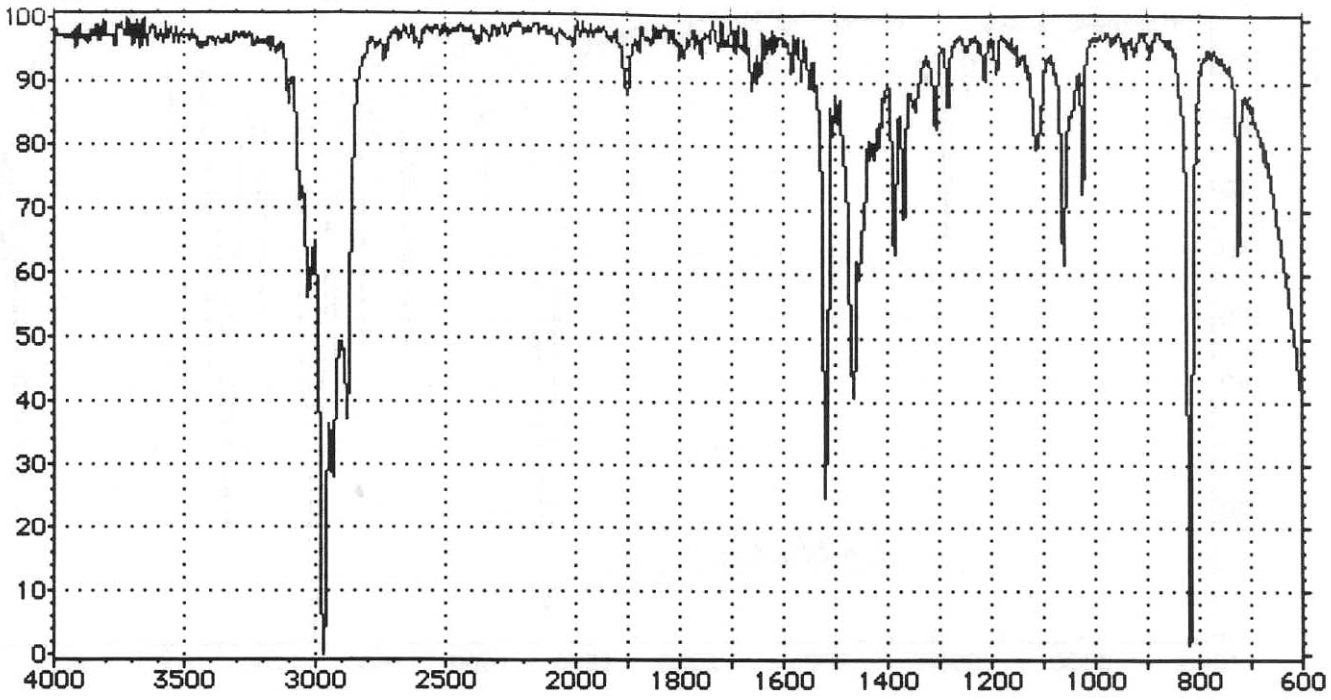


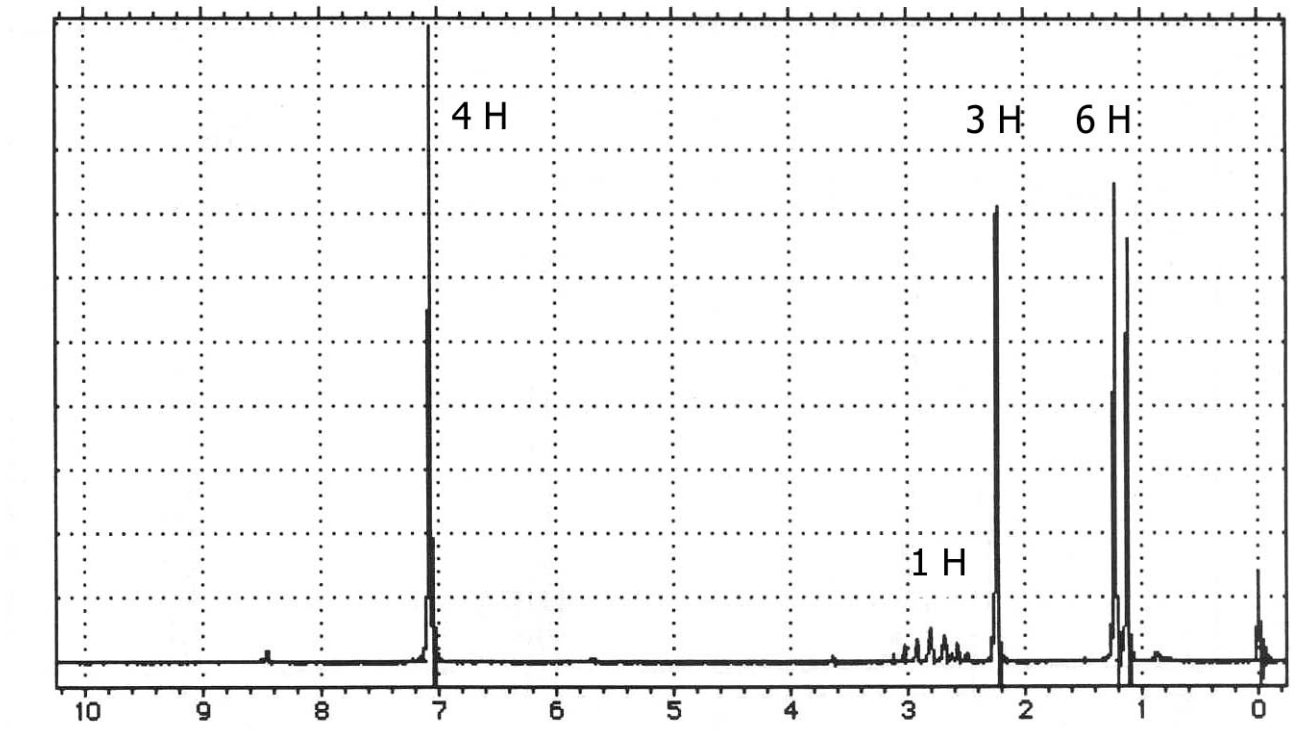
Compound 2, $C_4H_8O_2$



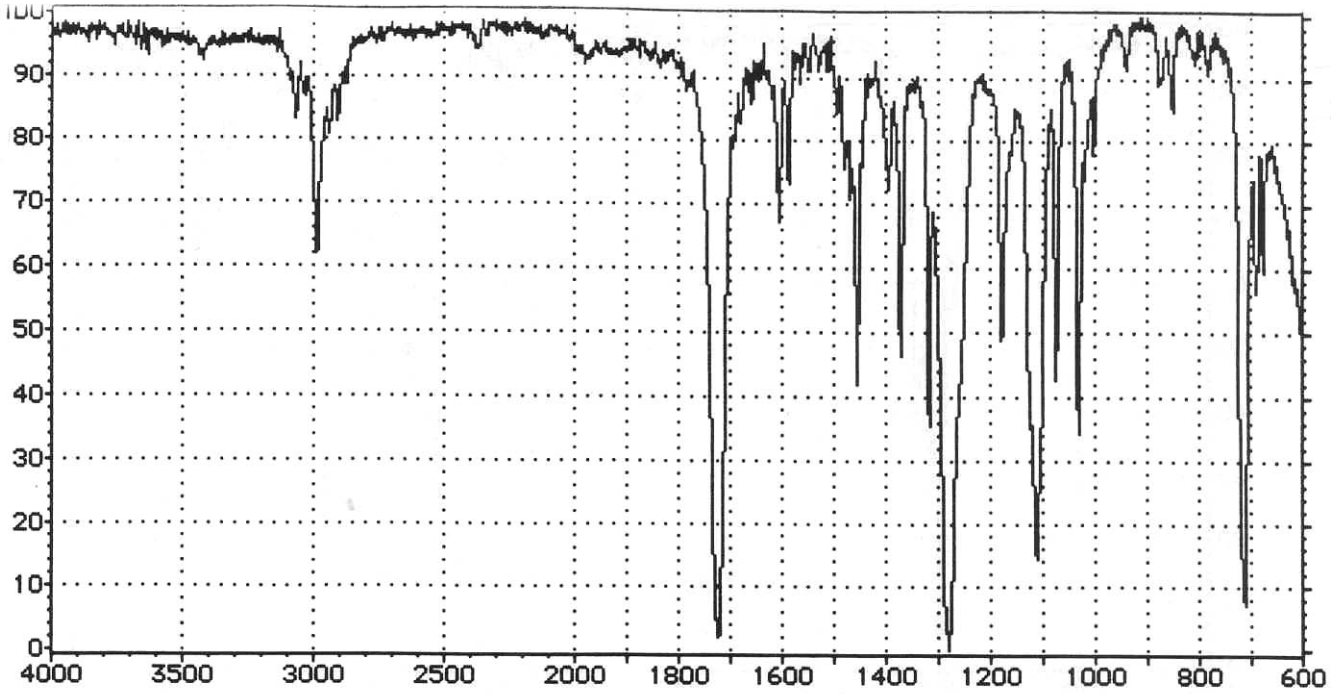


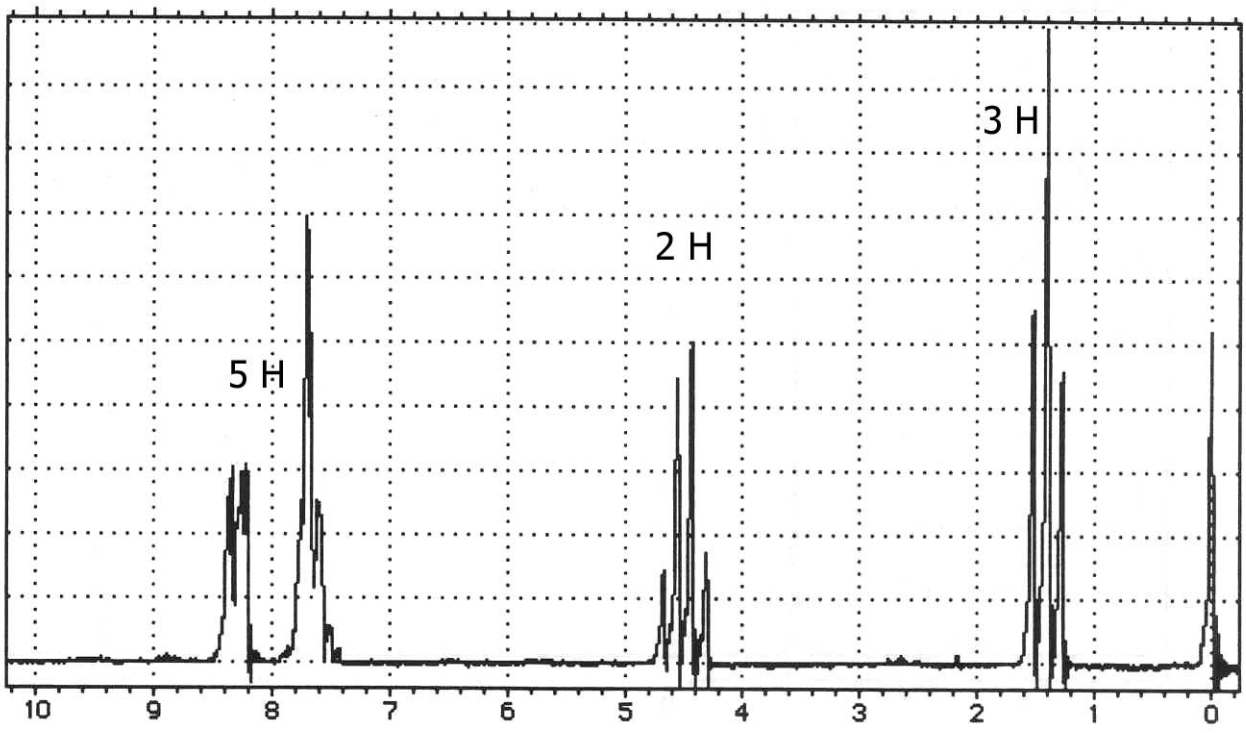
Compound 3, $C_{10}H_{14}$



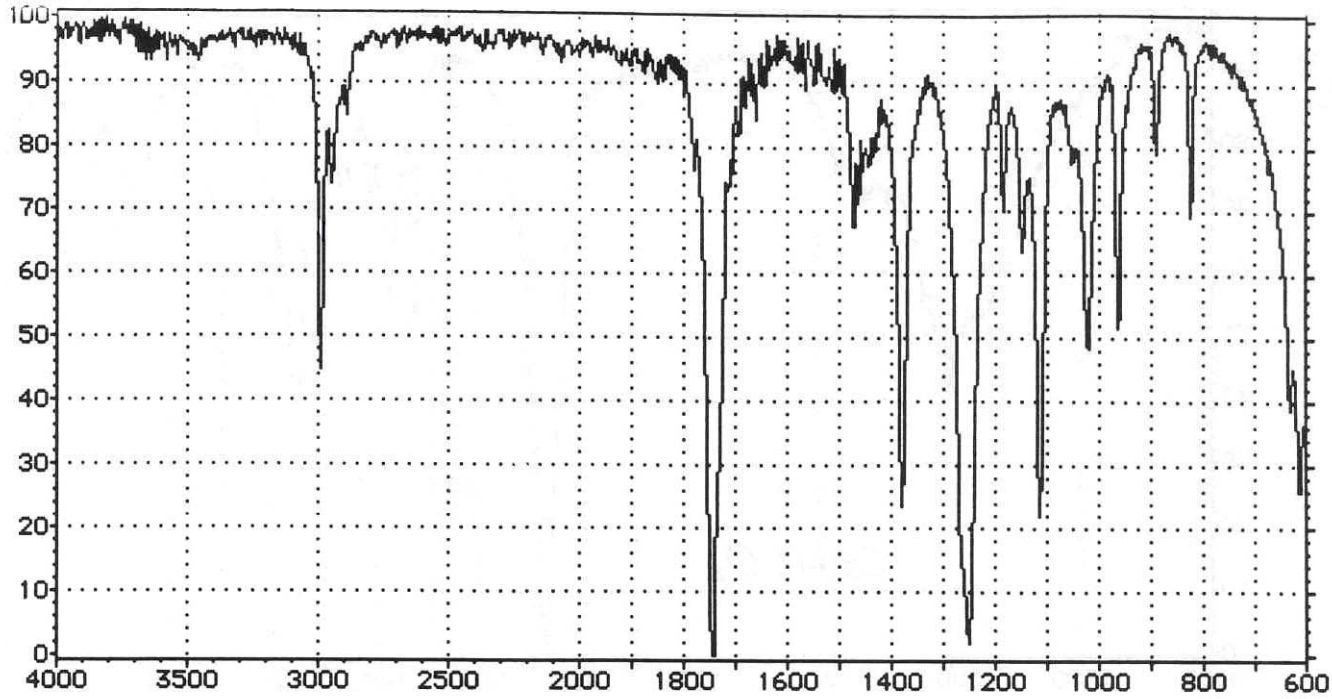


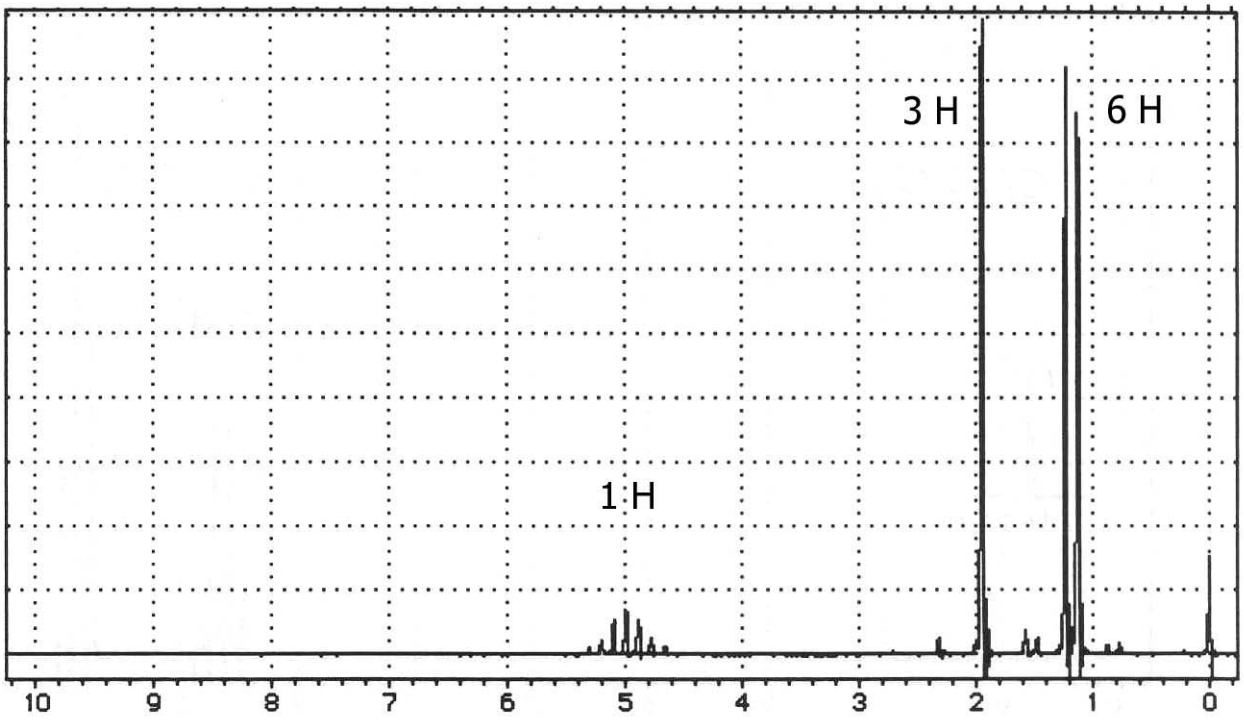
Compound 4, $C_9H_{10}O_2$



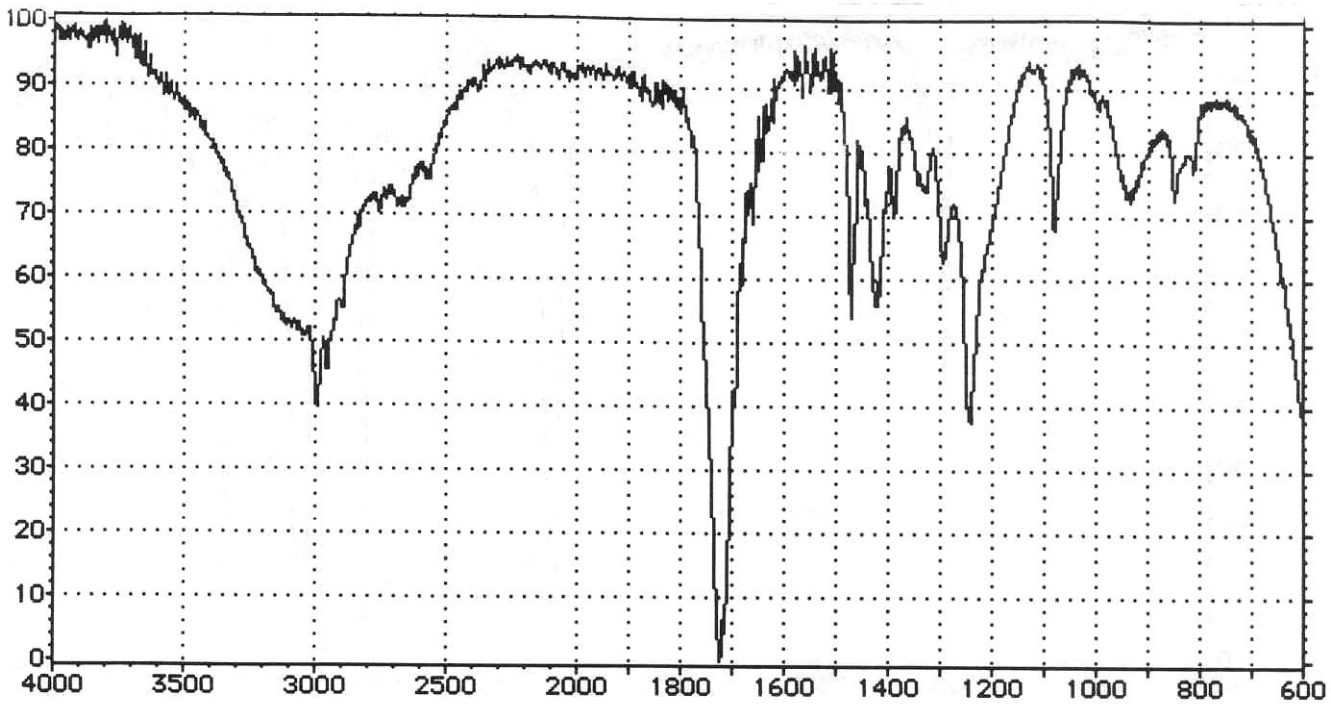


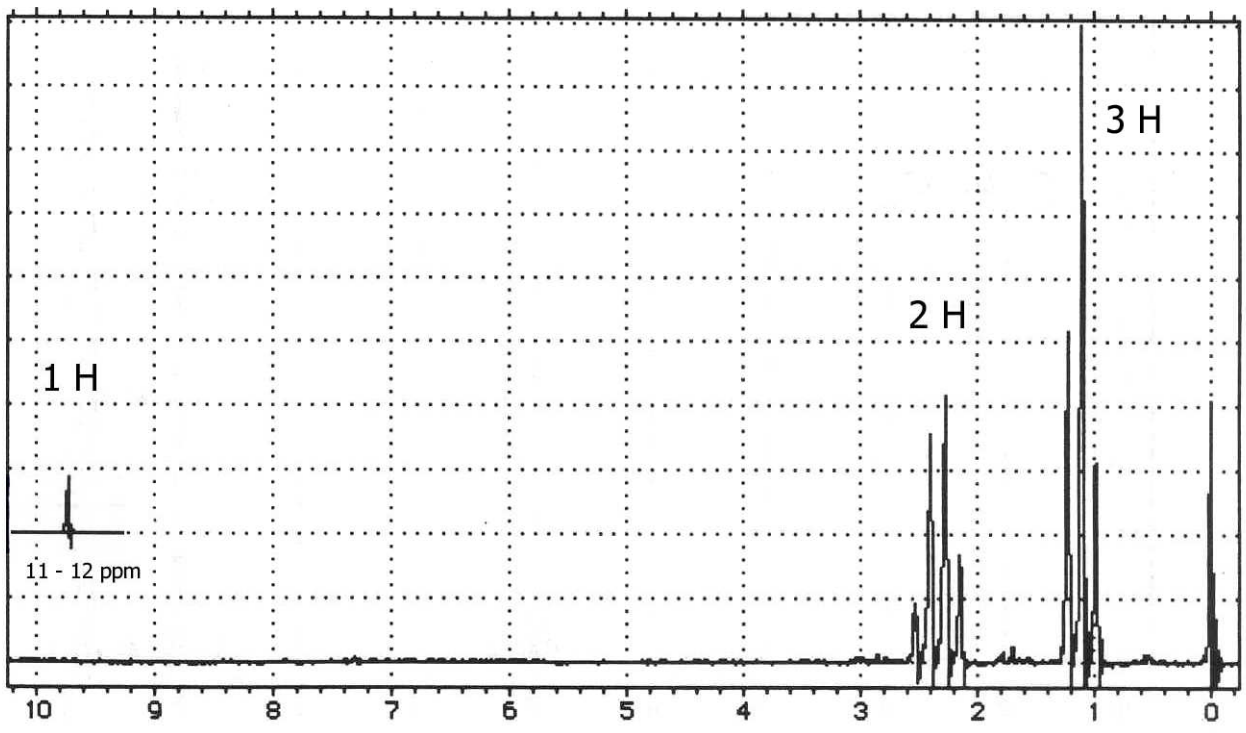
Compound 5, $C_5H_{10}O_2$



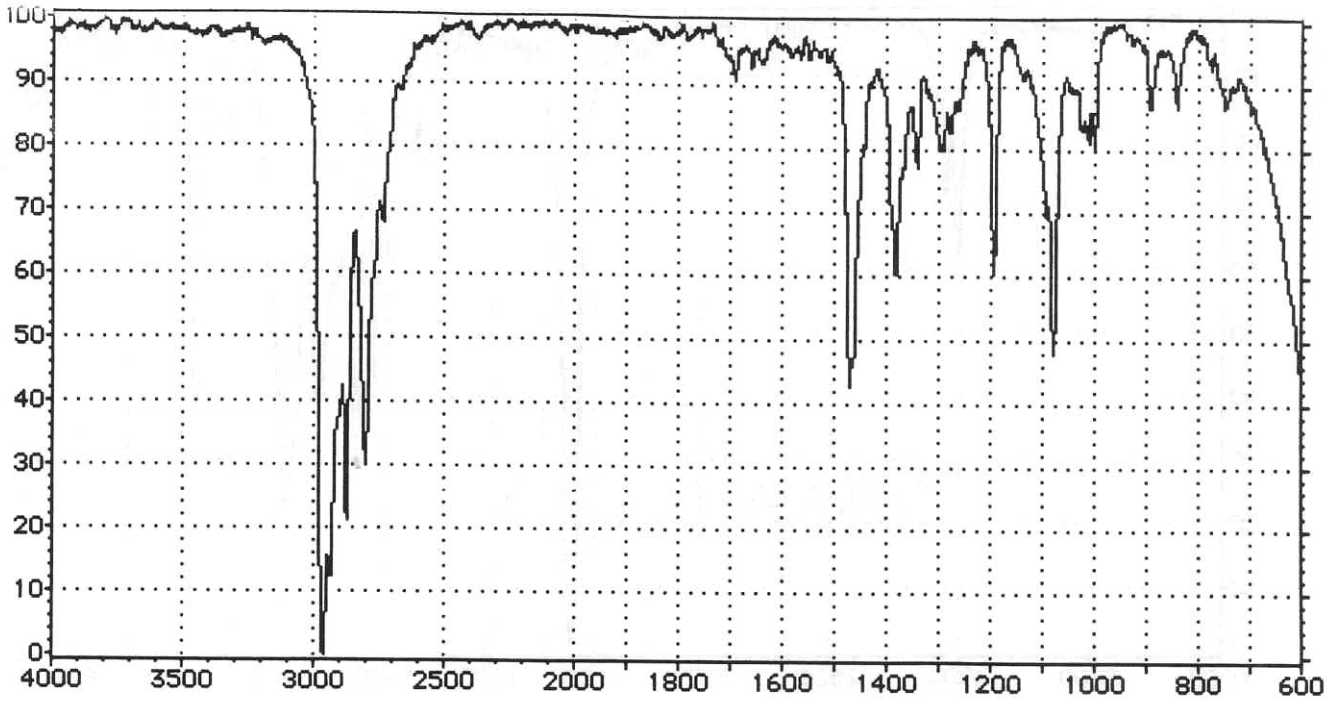


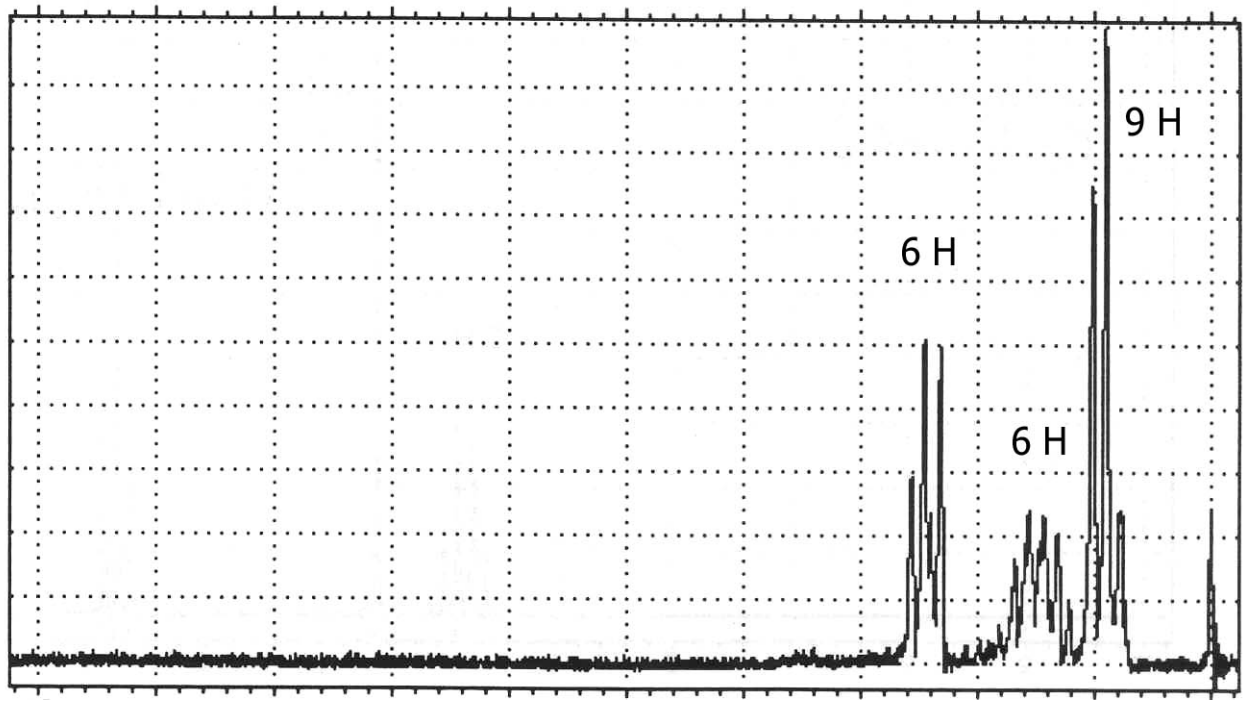
Compound 6, $C_3H_6O_2$





Compound 7, $C_9H_{21}N$





Compound 8, $C_5H_7NO_2$