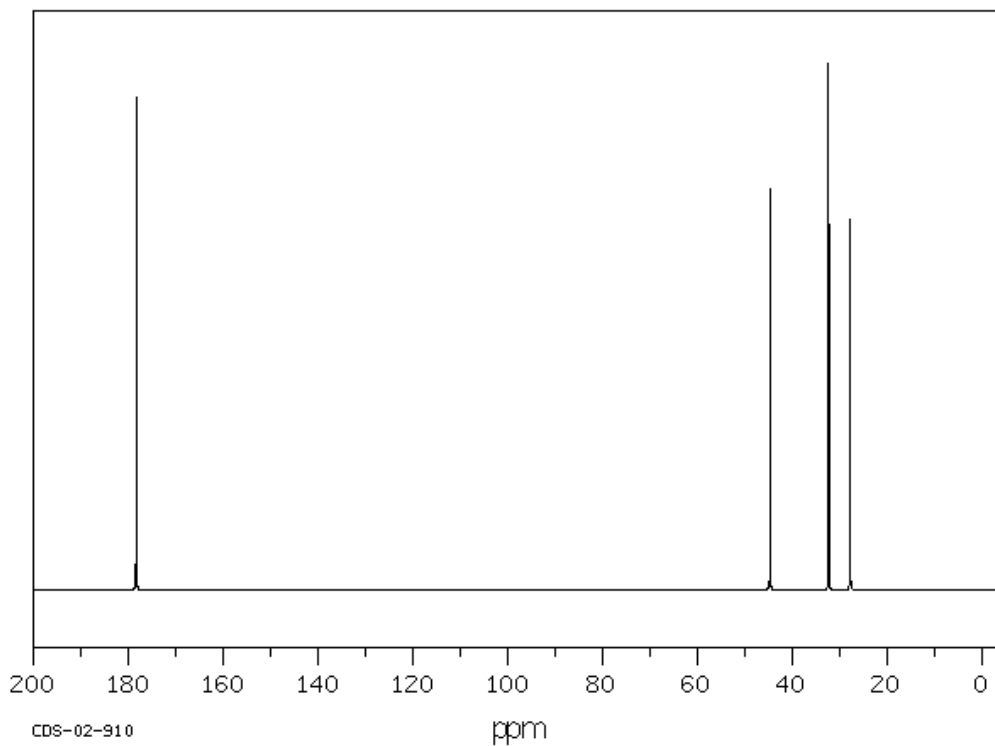
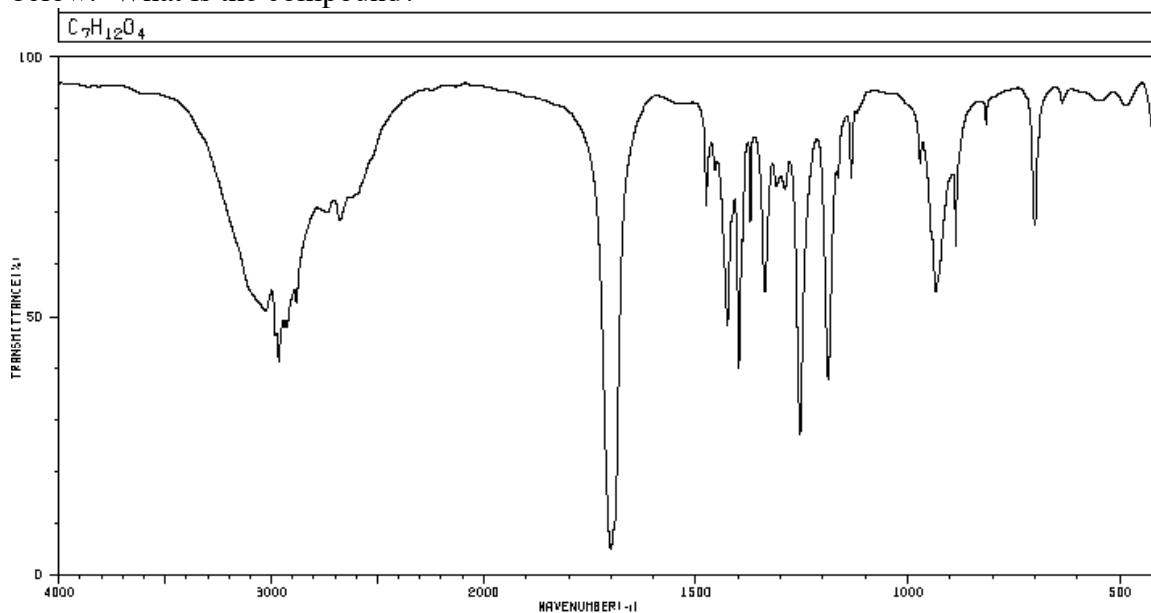
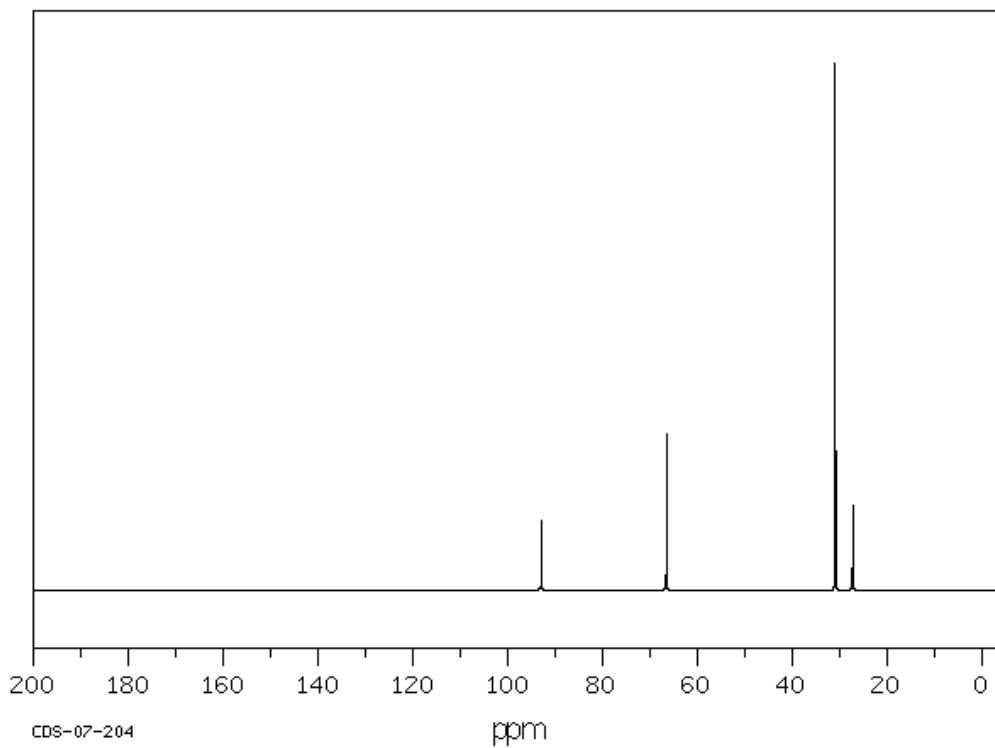
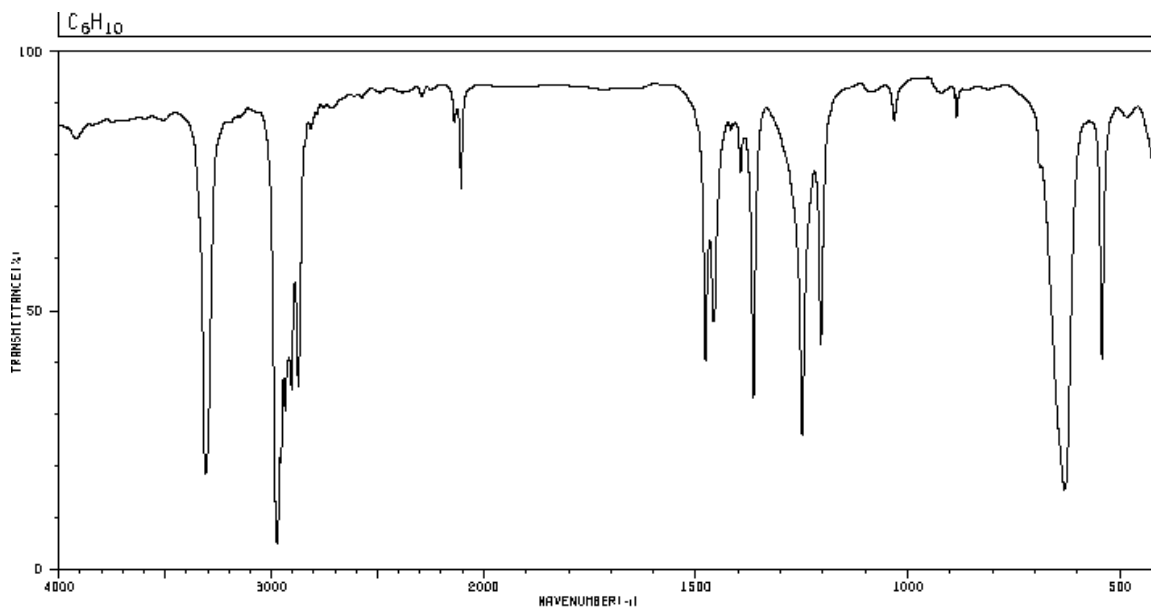


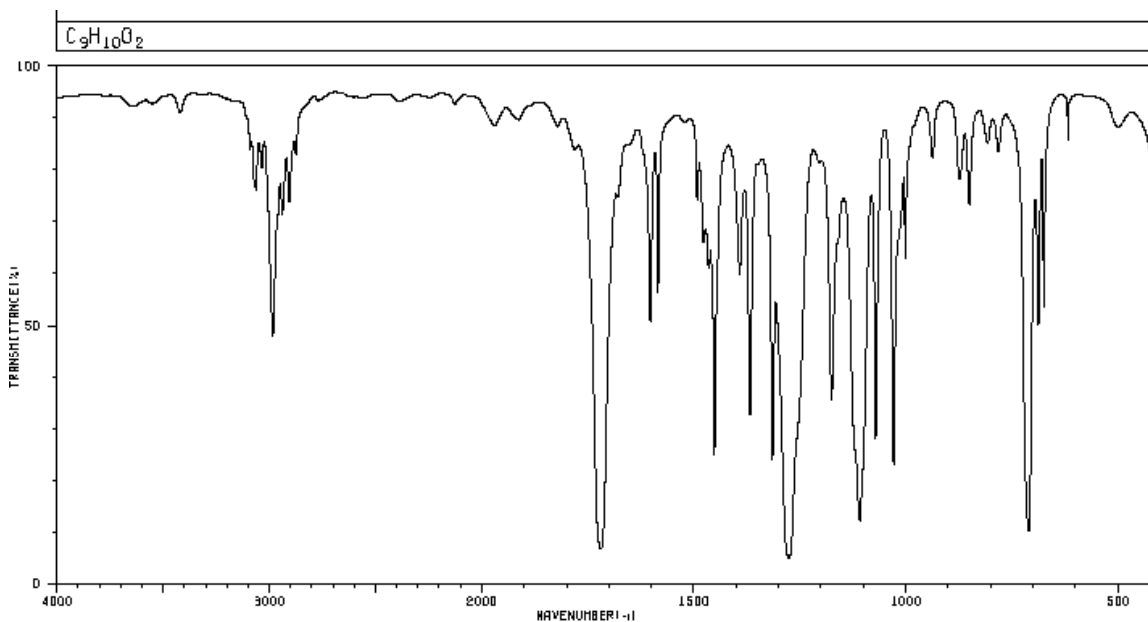
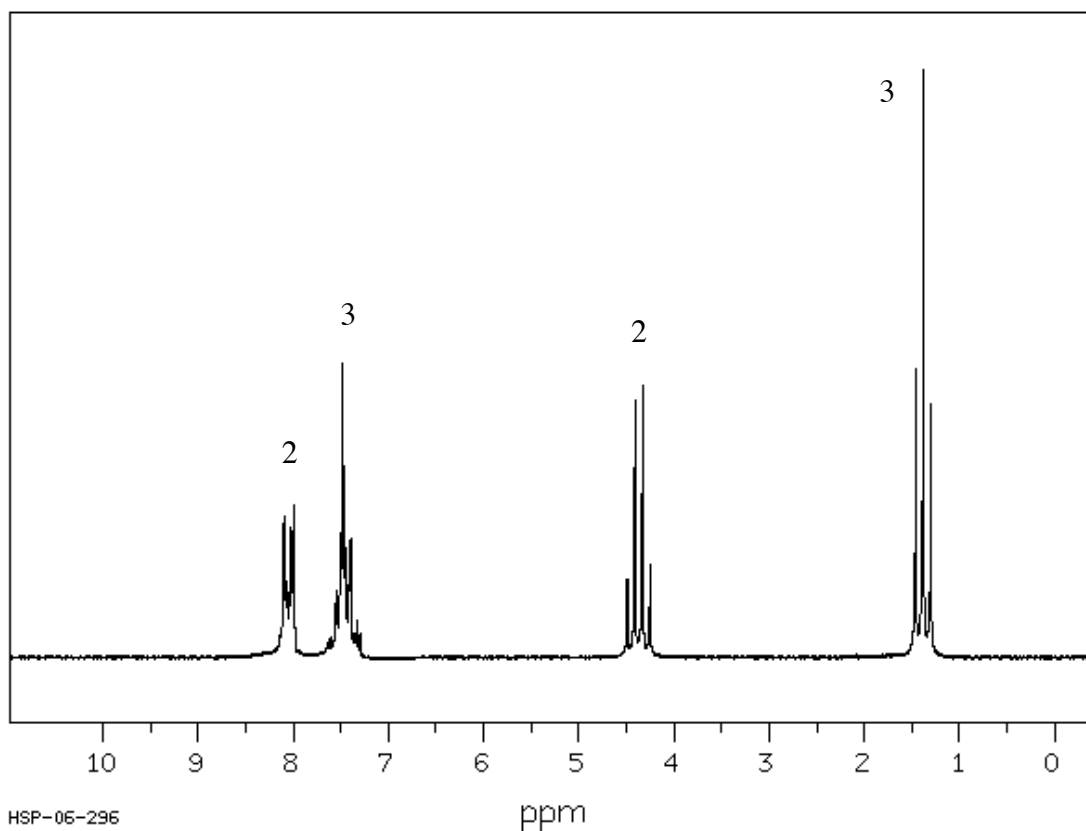
1. The IR and ^{13}C NMR of sample with a molecular formula of $\text{C}_7\text{H}_{12}\text{O}_4$ is shown below. What is the compound?



2. Molecular formula is C_6H_{10} and the IR and ^{13}C NMR are given below. What is the structure?

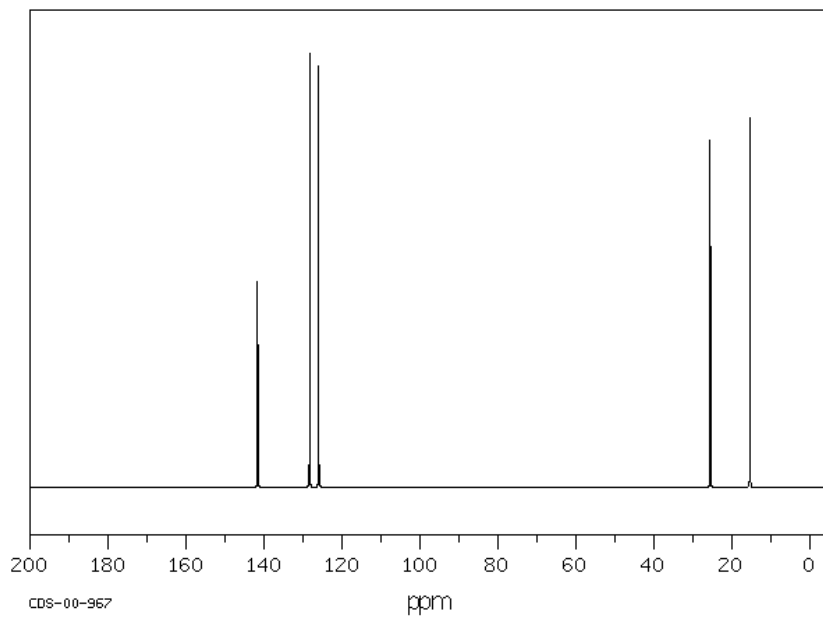


3. The ^1H NMR with relative integration values and IR with a peak at 1719 cm^{-1} for a compound with a molecular formula of $\text{C}_9\text{H}_{10}\text{O}_2$ is shown below. What is the structure?

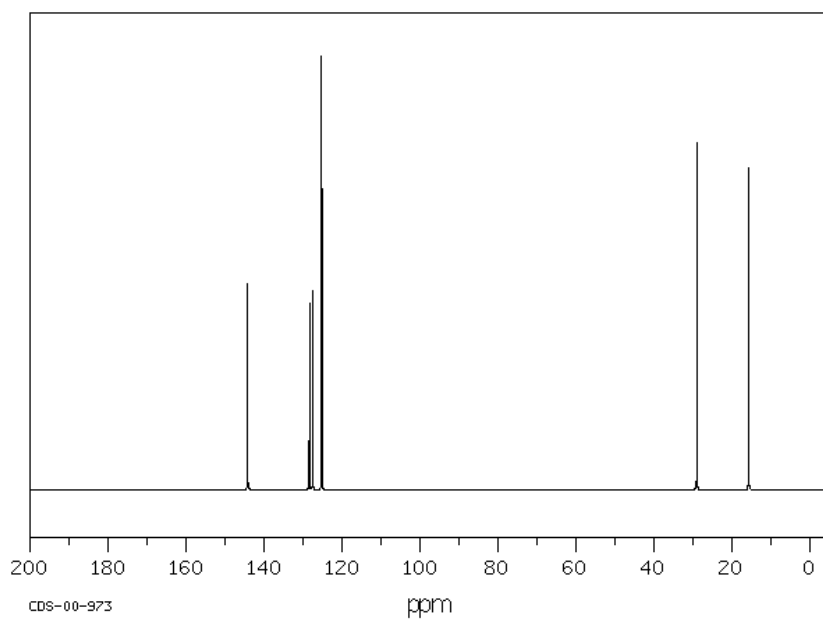


4. Following are ^{13}C NMR of Isomers of $\text{C}_{10}\text{H}_{14}$. Each display similar ^1H NMR spectra with a quartet at ~ 2.6 ppm and a triplet at ~ 1.1 ppm (in addition to other peaks). What is the structure of each?

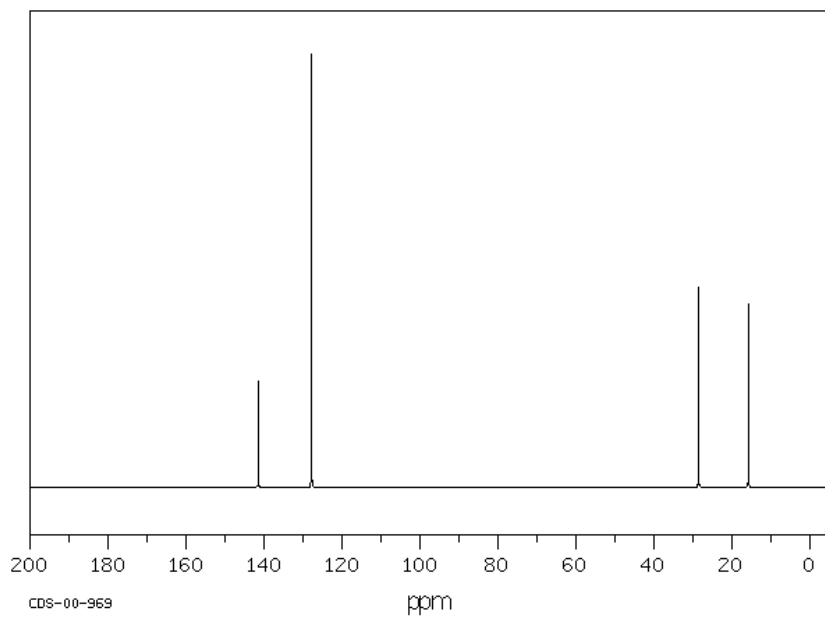
A.



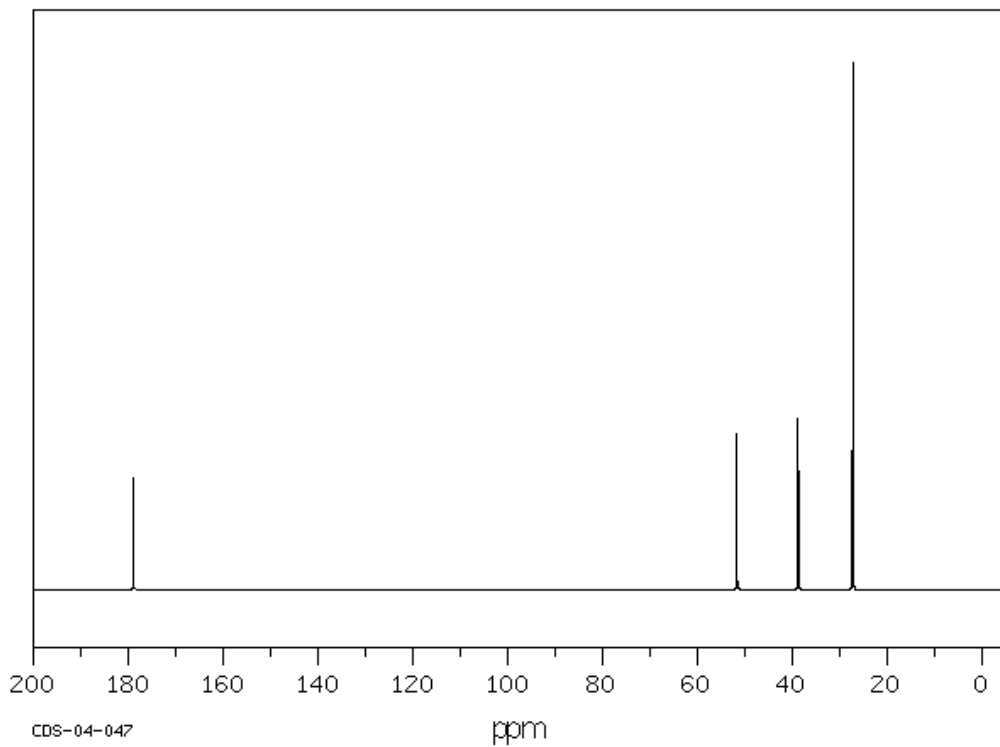
B.



C.



5. Compound has formula $C_6H_{12}O_2$. The 1H NMR shows two singlets at 3.6 and 1.2 ppm and the IR shows a peak at 1740 cm^{-1} . What is the structure?



6. Given the MS, ^1H and ^{13}C NMR of an unknown compound, what is the structure?

