1. The IR and $^{13}$C NMR of an unknown 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 C₆H₁₀ and the IR and \(^{13}\)C NMR are given below. What is the structure?
3. The $^1$H NMR with relative integration values and IR with a peak at 1719 cm$^{-1}$ for a compound with a molecular formula of C$_9$H$_{10}$O$_2$ are shown below. What is the structure?
4. Following are $^{13}$C NMR of Isomers of C$_{10}$H$_{14}$. Each isomer displays similar $^1$H NMR spectra with a quartet at $\sim$2.6 ppm and a triplet at $\sim$1.1 ppm (in addition to other peaks). What is the structure of each?

A.

B.
5. Compound has formula $\text{C}_6\text{H}_{12}\text{O}_2$. The $^1\text{H}$ 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, $^1$H and $^{13}$C NMR of an unknown compound, what is the structure?