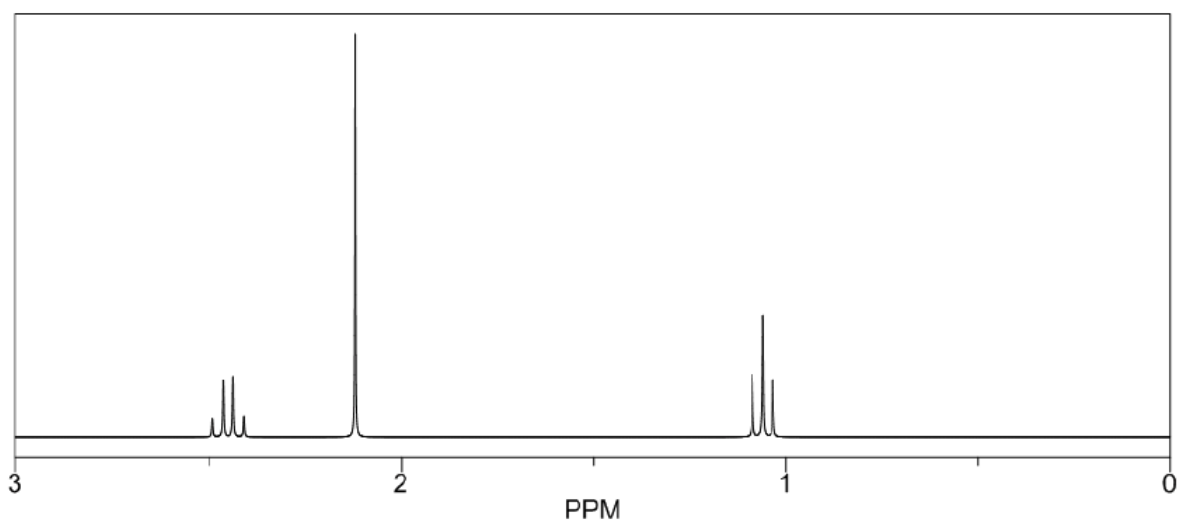
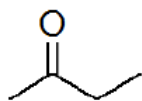
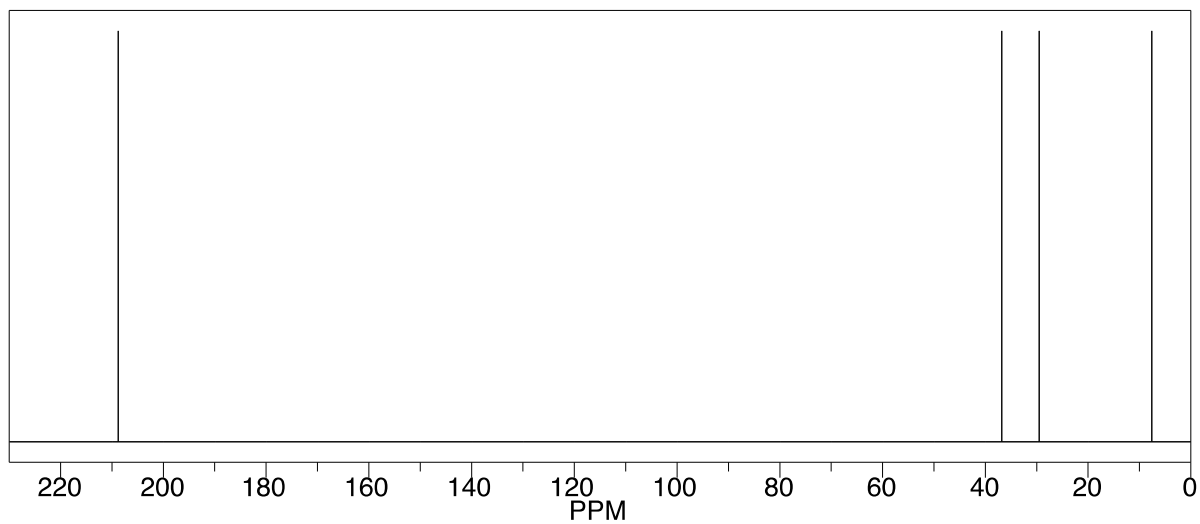


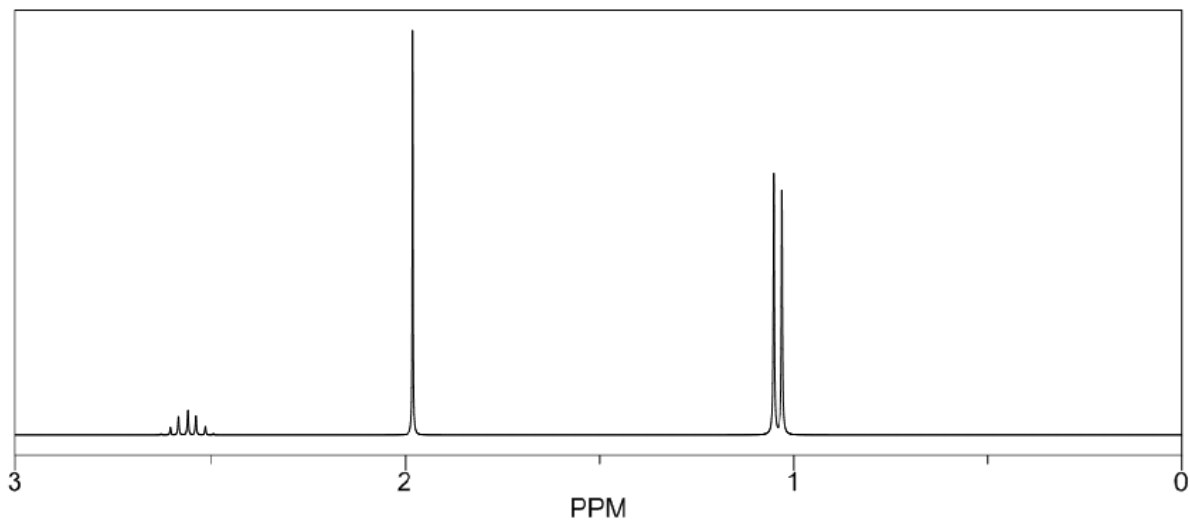
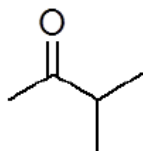
1. A. Assign all ^1H of the Compound to the ^1H -NMR spectrum is provided.



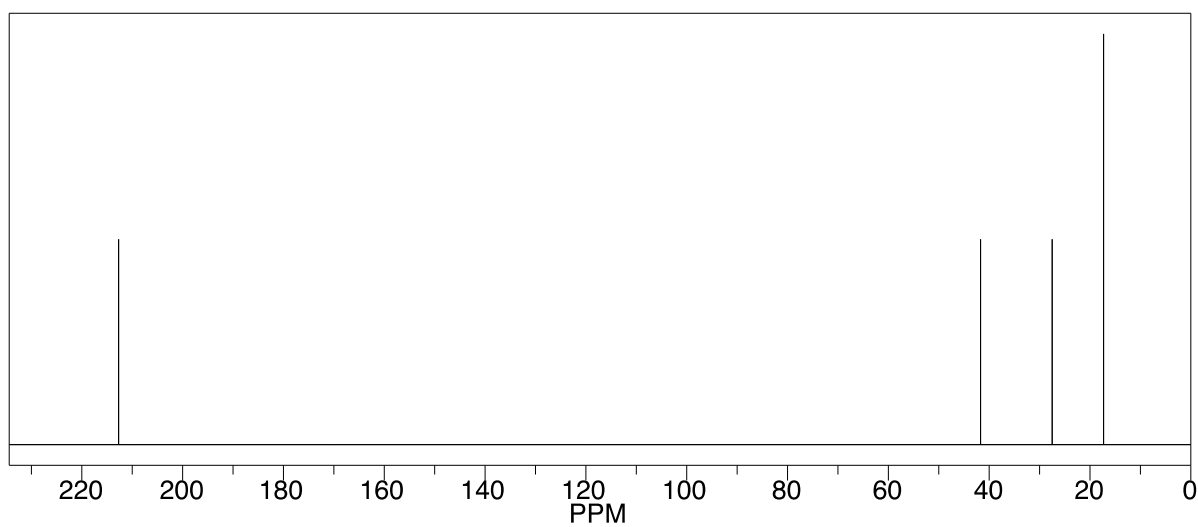
B. Assign all Carbons of the Compound to the ^{13}C -NMR spectrum is provided.



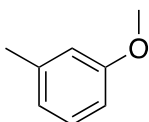
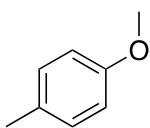
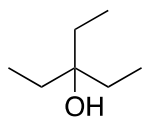
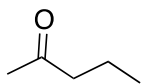
2. A. Assign all ^1H of the Compound to the ^1H -NMR spectrum is provided.



B. Assign all Carbons of the Compound to the ^{13}C -NMR spectrum is provided.

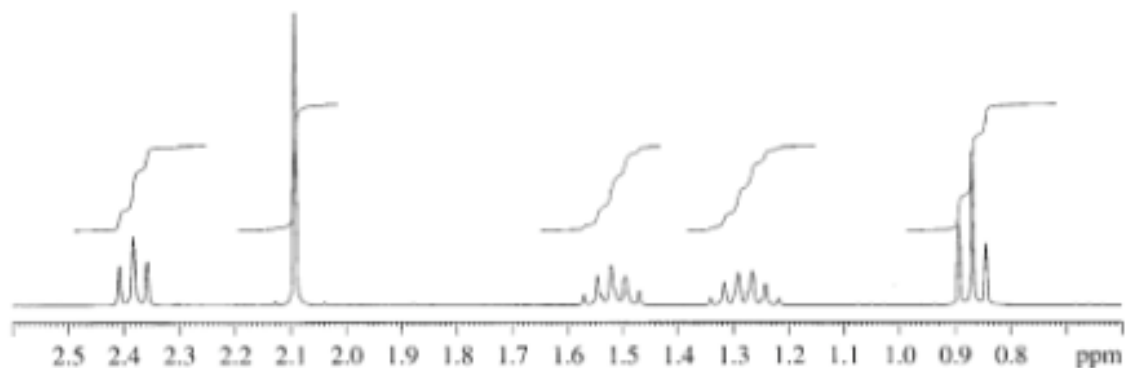


3. A. How many ^1H NMR signals does each compound exhibit? Also, provide the **Splitting patterns of each Hydrogen**. B. How many ^{13}C -NMR signals does each compound exhibit?

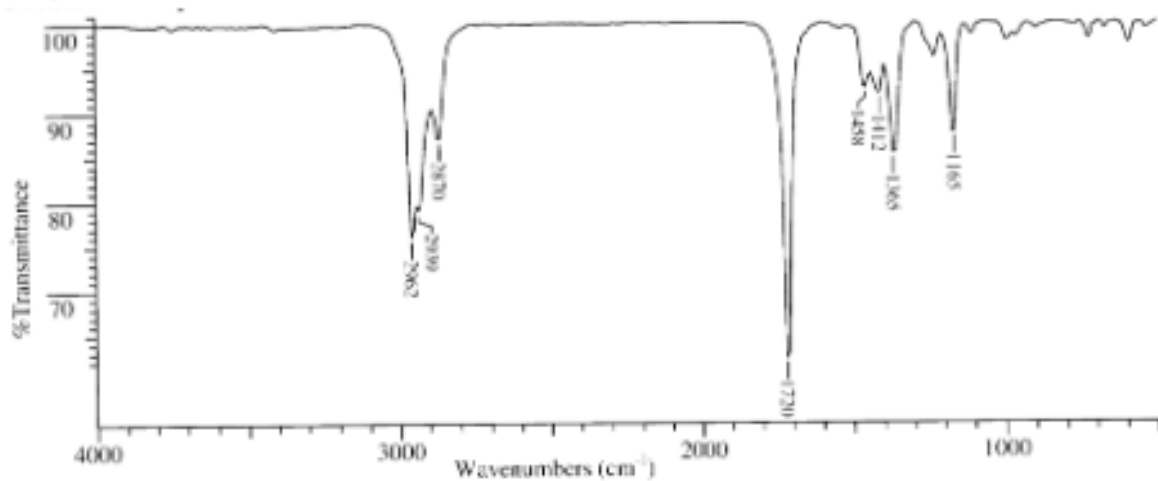


Molecular Formula: $C_6H_{12}O$

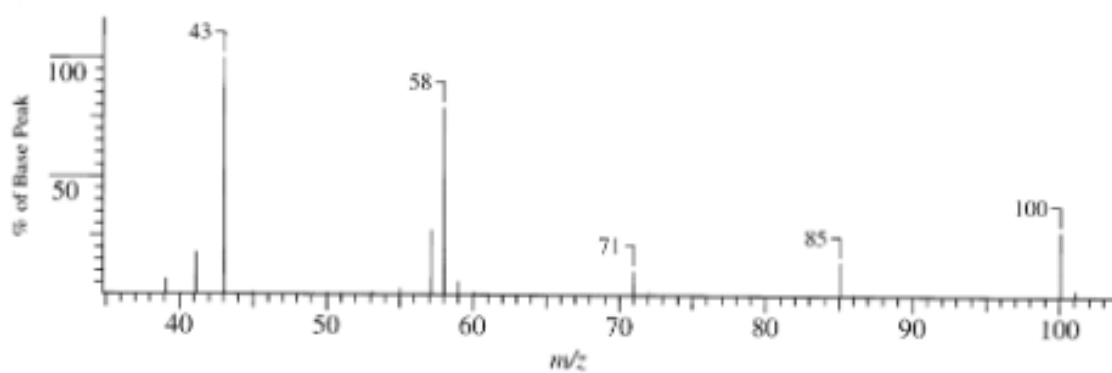
4.



IR Spectrum

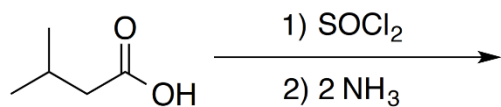


MS Spectrum

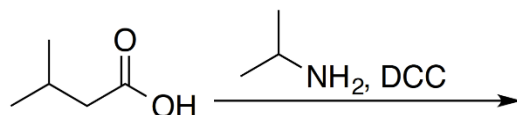


5. Complete the following chemical reactions showing all *major* organic products.

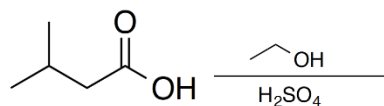
A.



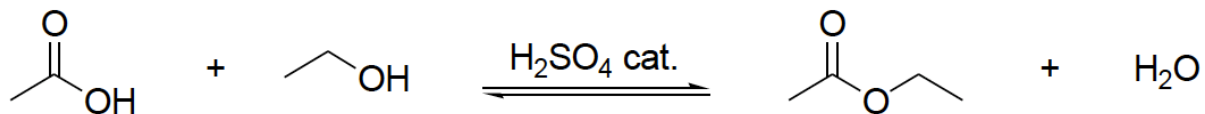
B.



C.

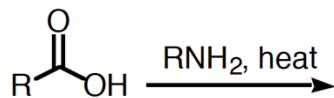


6. Propose a mechanism for the following Fischer Esterification:

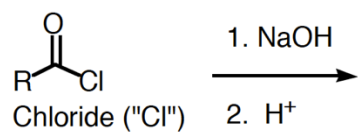


7. Complete the following chemical reactions showing all products

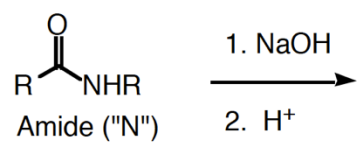
A.



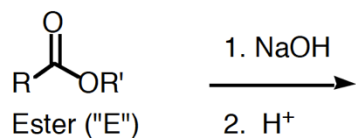
B.



C.



D.



8. Number the following compounds in order of their decreasing reactivity with nucleophiles.

