

4/18/12 Lab #2: Robinson annulation
 Theory 625-628
 Procedure 628-629

$C_6H_{13}Br$: δ 3.460, dd, 2H δ 1.45, t, 1H

δ 1.427, dq, 4H δ 0.895, t, 6H

$C_6H_{10}O$: δ 5.79, dd, 1H δ 5.02, dd, 1H

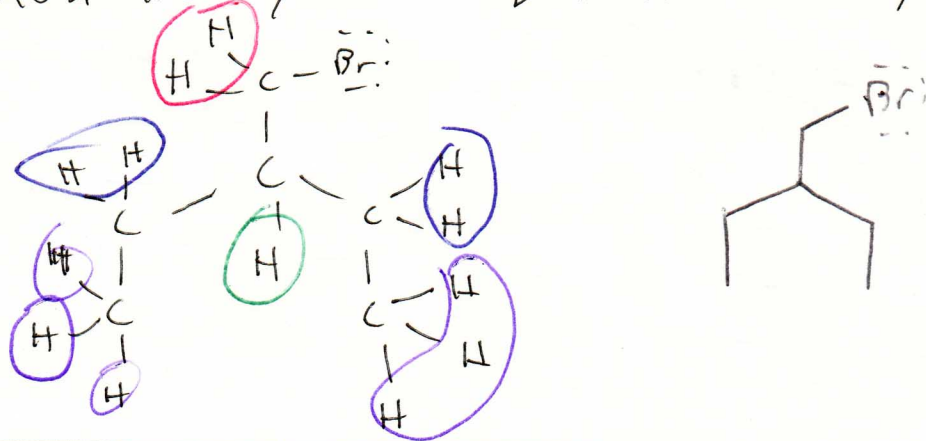
δ 4.97, dd, 1H δ 2.52, t, 2H

δ 2.74, d, 2H δ 2.149, s, 3H

$$D.O.U. = \frac{(2C + 2 - X + N) - H}{2}$$

$C_6H_{13}Br \rightarrow$ No D.O.U.

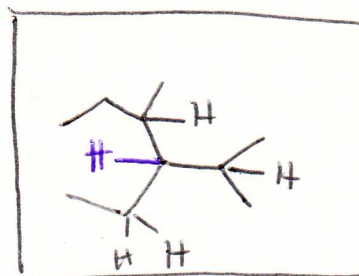
Integration of $\delta \rightarrow$ symmetry
 most likely two equivalent methyl groups



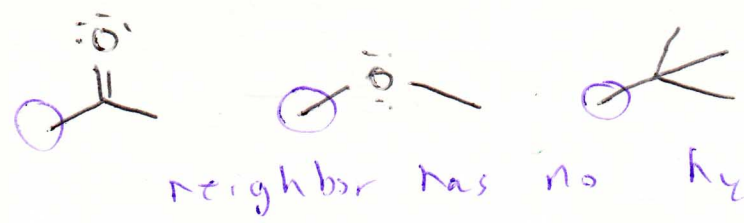
$C_6H_{10}O \rightarrow$ 2 D.O.U. \rightarrow

~~$C=C + ring$~~ ; $C=O + C=C$; $C=O + ring$;
 $C=C + ring$; 2 rings

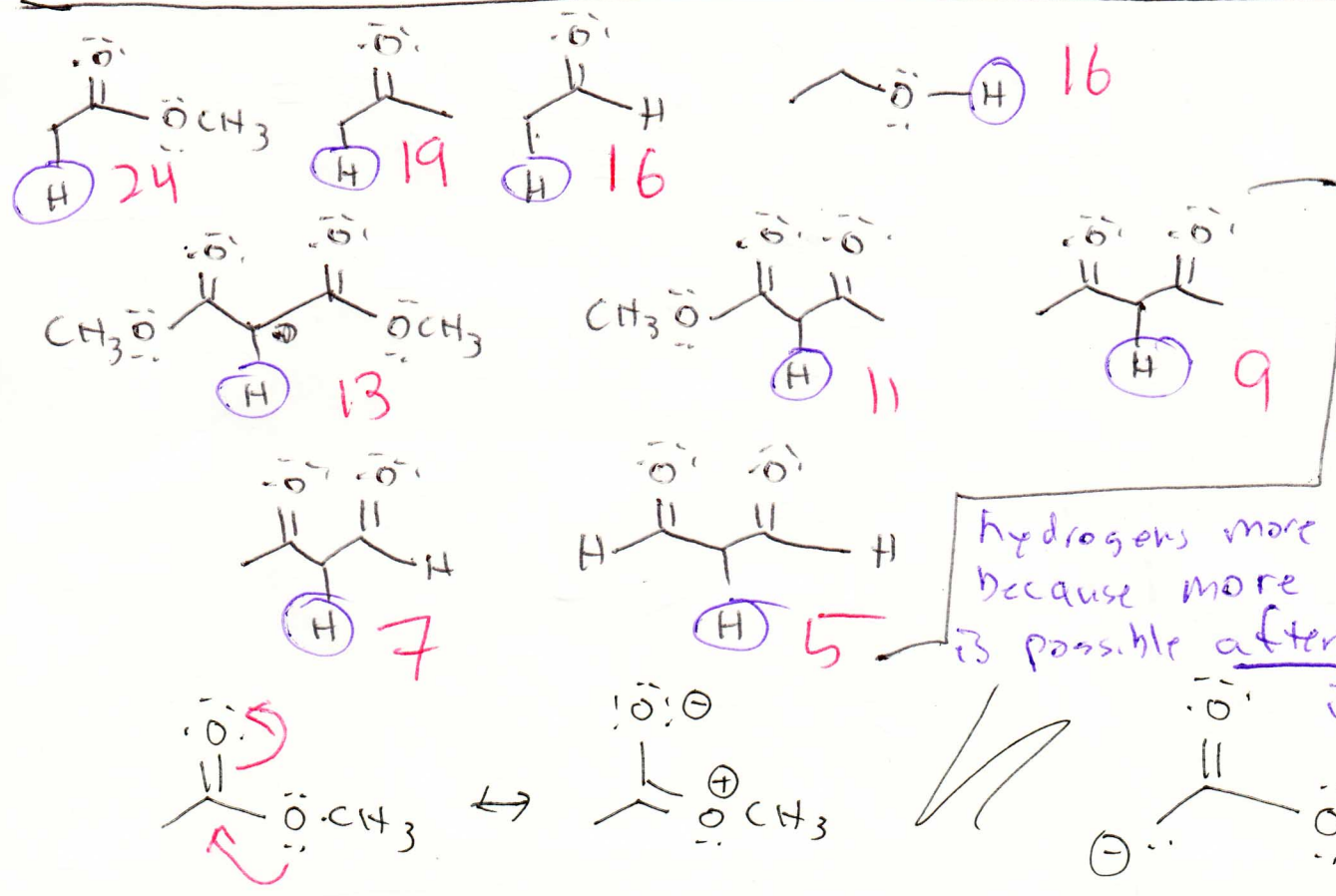
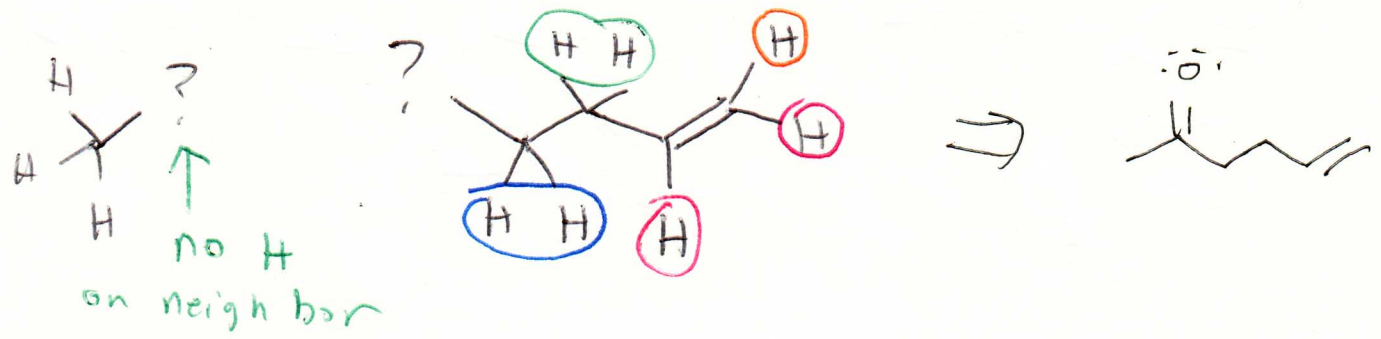
Given that there are 3 different hydrogens - each with $\delta > 5$ and each with complex splitting - the molecule likely contains a terminal alkene.



These methyl groups are singlets since their

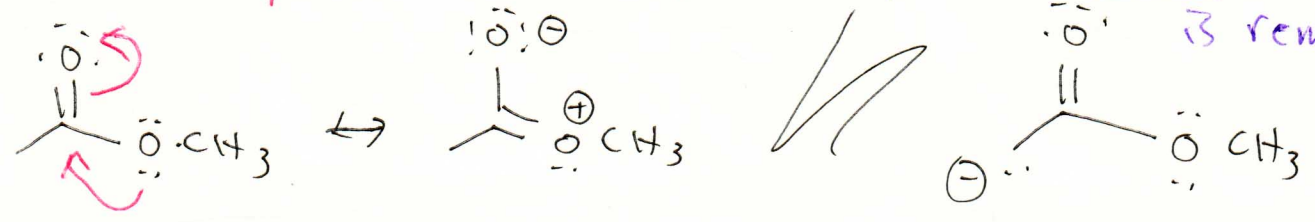


neighbor has no hydrogens.



The presence of two C=O makes the circled

hydrogens more acidic because more delocalization is possible after the H is removed.



If a C=O has e^- density provided to it, it will reduce the δ^+ on the C=O carbon. Since the ability to form an enolate depends on the C=O, stabilizing the C=O through either hyperconjugation or delocalization will make the enolate more difficult to form, making it less acidic.