5. (10 pts) Explain, with sentences and structures, the observed **Regio- and Stereoslectivity** in the reaction below.

$$H_3C$$
 H_3CCH_2 H_3CCH_2 H_3CCH_3 H_3CCH_3 H_3CCH_3 H_3CCH_3 H_3CCH_3

6. (15 pts) Draw a structure of an unknownwhich has the following spectra: IR: strong absorption at 1703 cm^{-1;} 1 H-NMR $_{0}$ 2.04 (singlet, 3H), 2.34 (singlet, 3H), 7.38 (multiplet, 2H), and 7.87 (multiplet, 2H); 13 C-NMR $_{0}$ 21, 31, 128, 129, 134, 140, 197. Mass Spec.: Molecular ion at m/z = 134 and large fragment ion at m/z = 119. CCUL Parameters $_{0}$ 4. CCUL Parameters $_{0}$ 5. The CCUL Parameters $_{0}$ 6. The CCUL Parameters $_{0}$ 6. The CCUL Parameters $_{0}$ 7. The CCUL Parameters $_{0}$ 8. The CCUL Parameters $_{0}$ 8. The CCUL Parameters $_{0}$ 9. The CCUL Parameters $_{0}$ 9.

 $\delta \, x \, \bigcup_{}^{H_3CCH_2Br} \delta \, y$