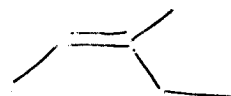
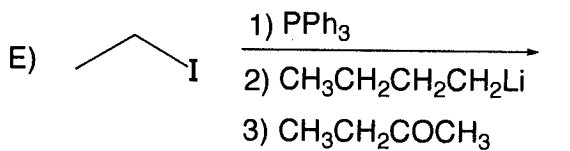
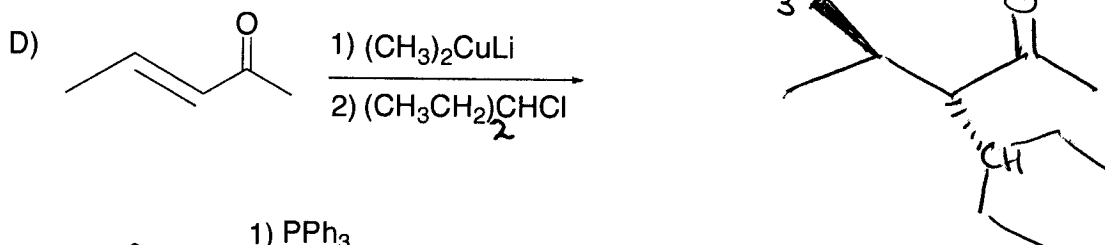
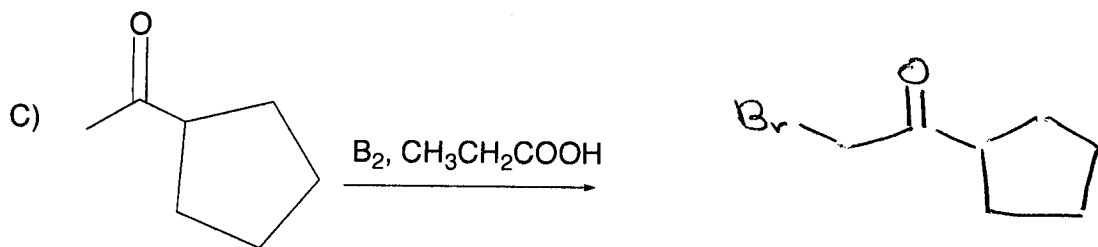
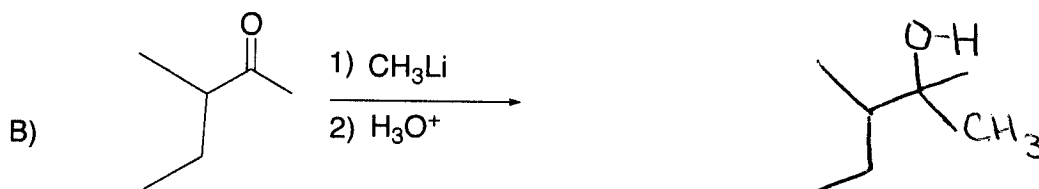
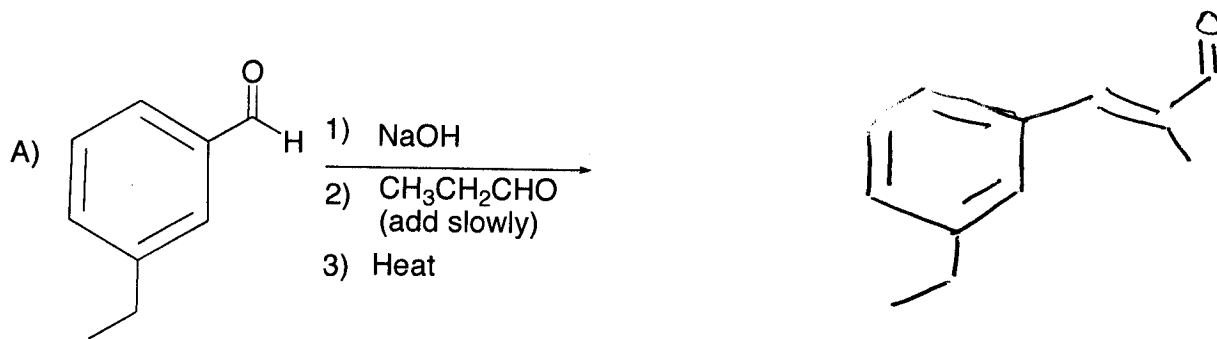
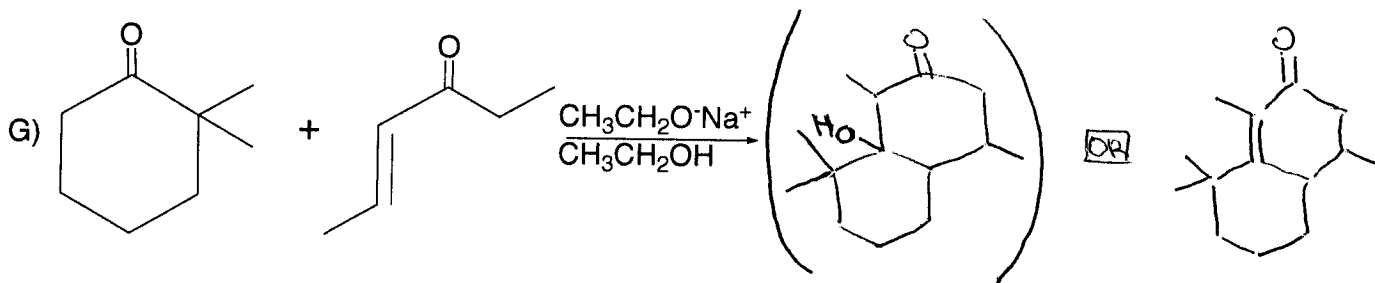


Jim Hollister

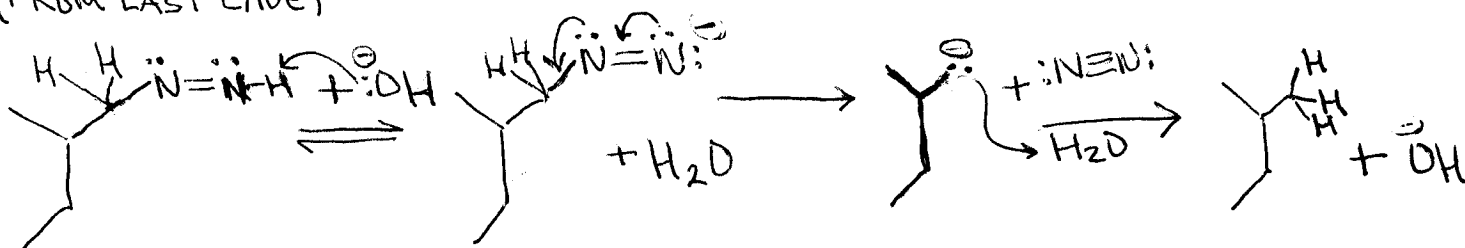
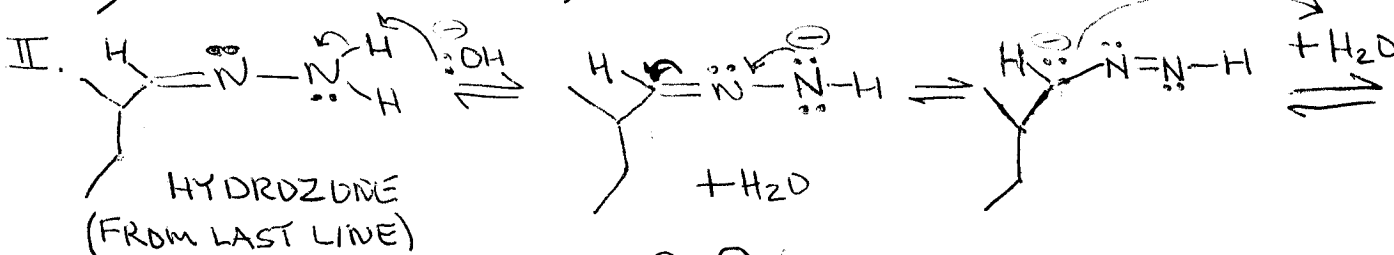
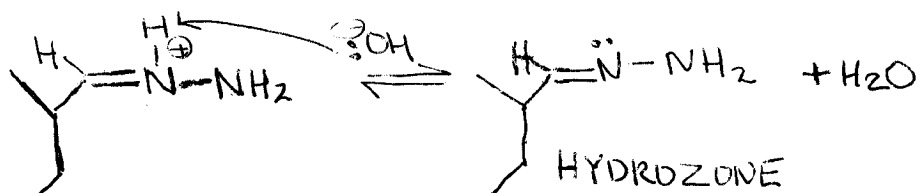
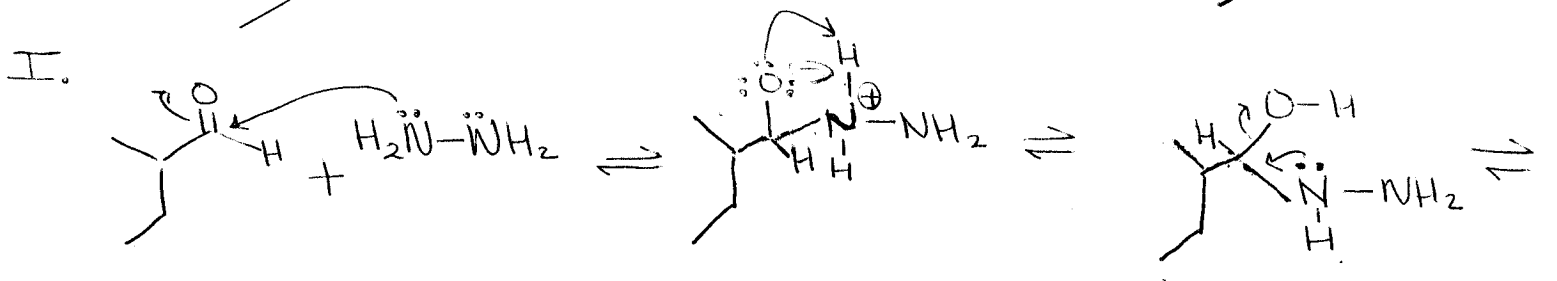
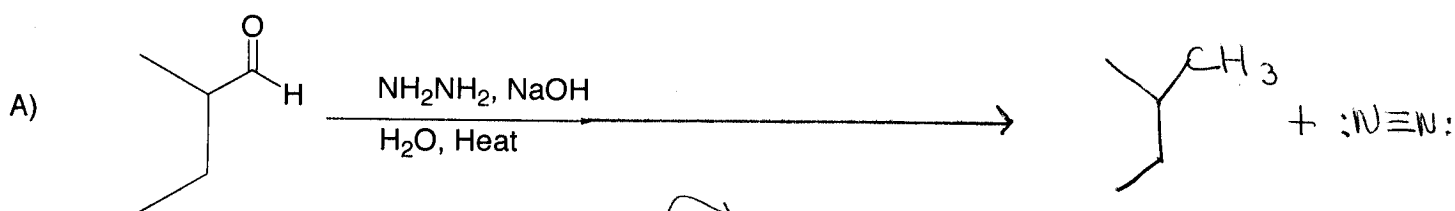
Chem 118B Practice Chapters 17 & 18

1. **Reactions:** Draw the structure of the expected organic product(s) formed in the following reactions. Assume all reagents listed are present in excess unless otherwise noted. If no reaction occurs, write, *No Reaction*.

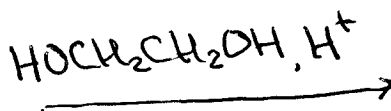
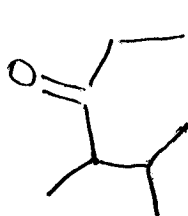
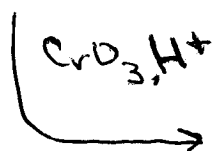
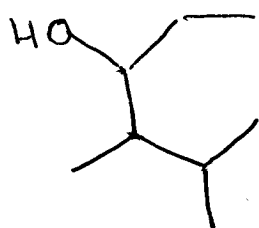
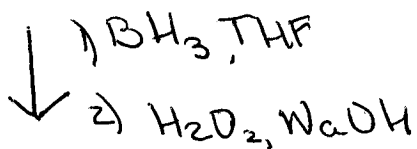
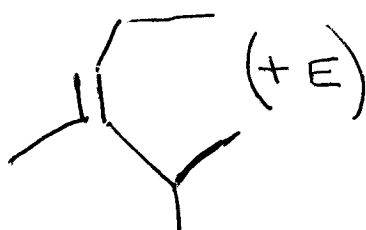
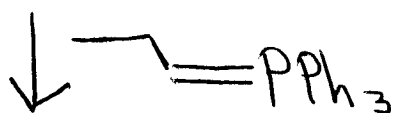
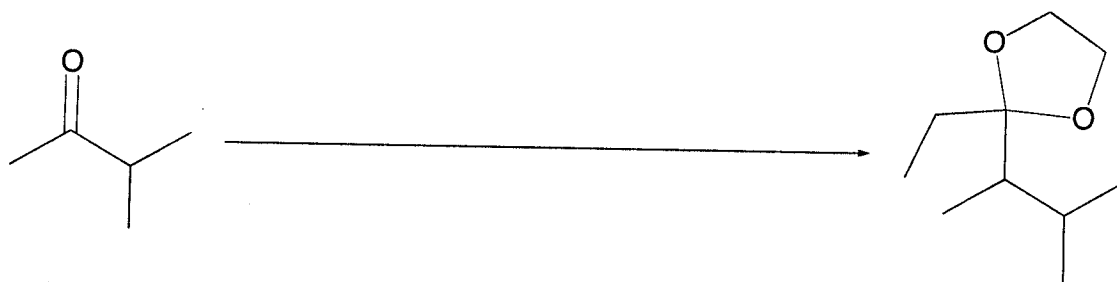




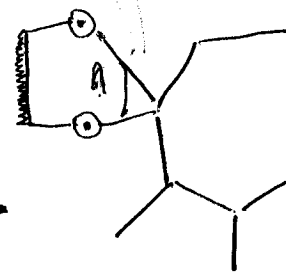
2. **Mechanism:** Show the detailed mechanism for the following reaction. Include the structure of the expected product(s) and all relevant resonance structures.



3. **Synthesis:** Show the reaction steps you would use to carry out the following synthesis. Include the reagents you would need for each step and the structure of each intermediate product formed in each step. Use any inorganic reagents you need and any organic reagents of four carbons or less.



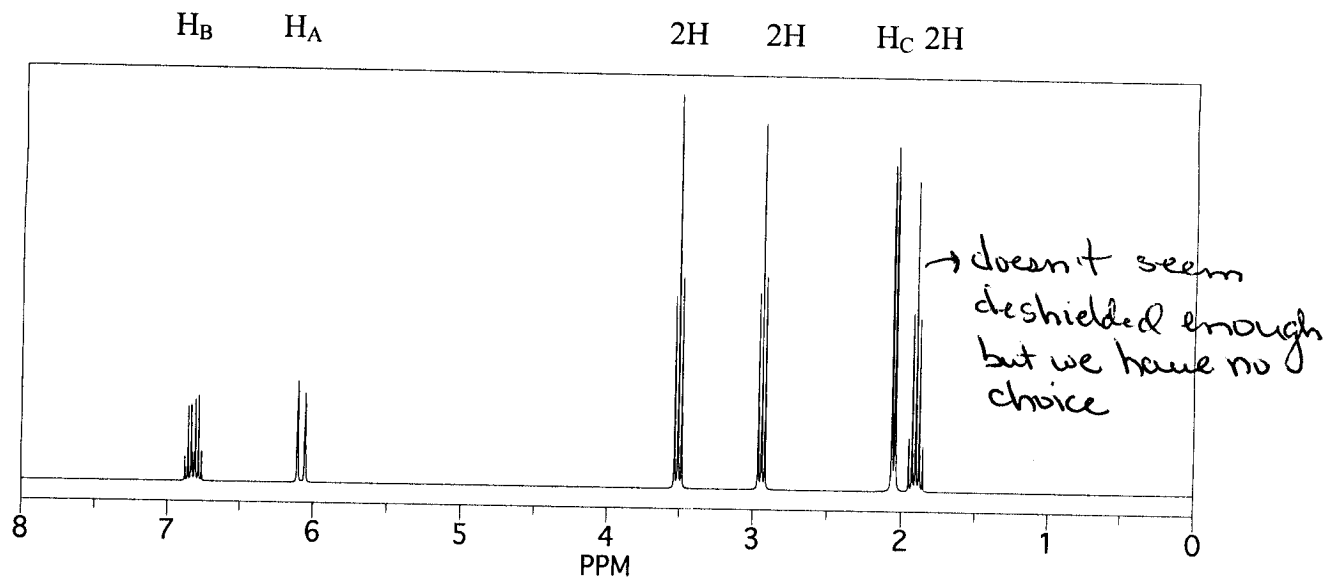
BART SAYS
"STUDY WELL"



PRODUCT

4. A purified compound, $C_7H_{11}BrO$, gave IR absorption peaks at 3100 , 2950 , and 1745 cm^{-1} , as well as the following proton and carbon-13 NMR spectra.

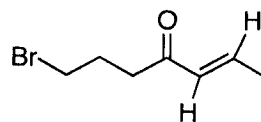
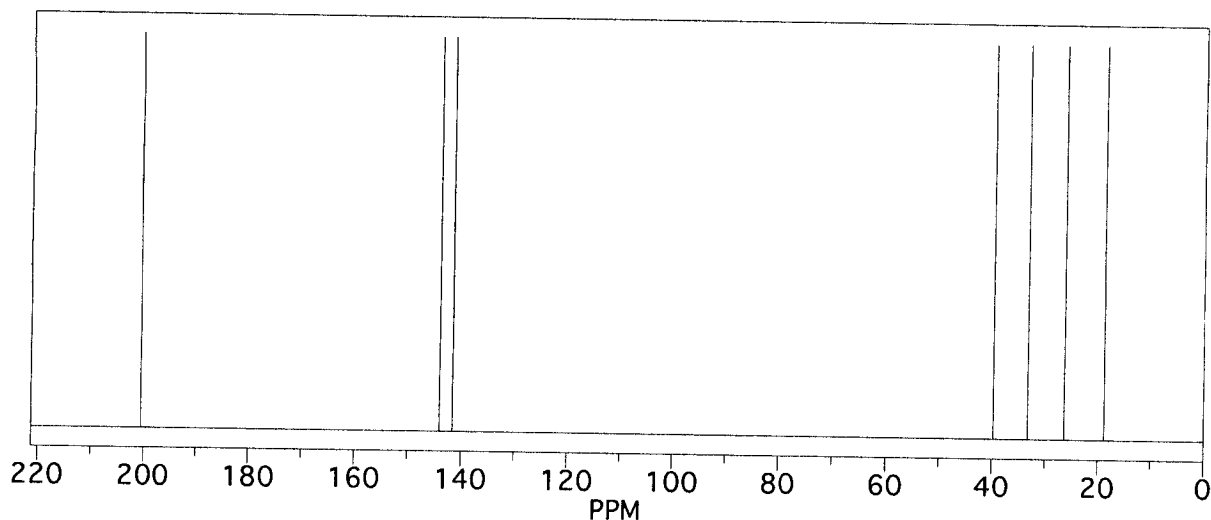
Integration symbols for each signal are directly above the corresponding signal. Note that H_C represents 3 hydrogens. See coupling constant data below proton spectrum.



$H_A = 1H, J = 18\text{ Hz (d), } 2\text{ Hz (q)}$

$H_B = 1H, J = 18\text{ Hz (d), } 7\text{ Hz (q)}$

$H_C = 3H, J = 7\text{ Hz (d), } 2\text{ Hz (d)}$



Give the structure and name of the compound. (*E*-7-bromohept-2-en-4-one or
(*E*)-7-bromo-2-hepten-4-one or *trans* can replace (*E*).

5. The compound in problem 4 above is treated with $\text{H}_2\text{NNH}_2 / \text{NaOH} / \text{heat}$. What is the resulting compound?

