Academic Honesty Policy. Academic honesty is strictly enforced on quizzes, exams, and other aspects of this course. Academic dishonesty will result in a failing grade in the class and a letter in the student's file. Activities constituting academic dishonesty include:

Cheating
- Copying from others during an examination.
- Communicating exam answers with other students during an examination.
- Offering another person's work as one's own.
- Taking an examination for another student or having someone take an examination for oneself.
- Tampering with an examination after it has been corrected, then returning it for more credit.
- Using unauthorized materials, prepared answers, written notes, or concealed information during an examination.

Dishonest Conduct
- Stealing or attempting to steal an examination or answer key from the instructor.
- Allowing another student to copy off of one's own work during a test.

Collusion
- Any student who knowingly or intentionally helps another student perform any of the above acts is subject to discipline for academic dishonesty.

I understand and will abide by this academic honesty policy: ____________________________ (signature) Seat: _______

1. Draw the product of the following series of reactions (Smith 4th ed. 23.22, 2 pts)

\[
\begin{align*}
\text{CH}_2(\text{CO}_2\text{Et})_2 & \xrightarrow{1. \text{NaOEt}} 1. \text{NaOEt} \\
2. \text{CH}_3\text{Br} & \xrightarrow{2. \text{CH}_3\text{Br}} \xrightarrow{\Delta} \text{H}_2\text{O}^+ \\
\end{align*}
\]

2. Rank the labeled protons in order of increasing acidity: ____ < ____ < ____ (Smith 4th ed. 23.35a, 2 pts)

3. Synthesize 2-pentanone from ethyl acetoacetate. You may use any other organic or inorganic reagents. (Smith 4th ed. 23.51a, 2 pts)

4. Draw a stepwise mechanism illustrating how the major product is formed (Smith 4th ed. 23.62, 2 pts)

5. Treatment of \( W \) with \( \text{CH}_3\text{Li} \) followed by \( \text{CH}_3\text{I} \) affords \( Y \) (\( \text{C}_7\text{H}_{14}\text{O} \)) as the major product. \( Y \) has a strong absorption in the IR spectrum at 1713 cm\(^{-1}\). Its \(^1\text{H}\) NMR spectrum is given below. Propose a structure for \( Y \). (Smith 4th ed. 23.73, 2 pts)