

Advanced Study Assignment
Organic 212L
Aldehydes and Ketones

Name: _____

1) a) One aldehyde (may or may not be on the list on page E14-7) gives a positive iodoform test. Which one is it?

2) Ethanol gives a positive iodoform test. Explain.

3) In semicarbazone formation only one of the two NH_2 groups in semicarbazide undergoes nucleophilic addition to the carbonyl group. Explain the differences in the reactivity of these two NH_2 groups, using resonance structures.

4) A student obtains the following results from the melting points of her derivatives. Oxime: mp 59°C , semicarbazone: 196°C . Referring to the table on page E14-7, which one aldehyde or ketone is most likely the unknown? Explain your reasoning. If the student is unsure if the choice is correct, what experiment would you do next?

5) Joe finds that the 2,4-DNP derivative of his unknown melts at $155 - 156^\circ\text{C}$ and the oxime melts at $68-69^\circ\text{C}$. He has only 20 minutes left, not enough time to make a semicarbazone derivative. What advice would you give Joe?

