UCI DEPARTMENT OF ORGANIC CHEMISTRY PEER TUTORING
REVIEW SESSION FEEDBACK EVALUATION

<table>
<thead>
<tr>
<th>Quarter: Spring 2019</th>
<th>Date: 5/21/2019</th>
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</thead>
<tbody>
<tr>
<td>Class: King</td>
<td>MT 2 Review</td>
</tr>
<tr>
<td>Tutors’ Names: Arash Khangholi, Maha Rauf, Cassandra Amezquita</td>
<td></td>
</tr>
</tbody>
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**COMMENTS/SUGGESTIONS**

(VERY IMPORTANT!) Name: Arash

Name: Maha

Name: Cassandra

What worked best?

What could be improved?

What would you like to see next time?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree or Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>This review was interactive and engaging.</td>
<td>□</td>
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<tr>
<td>Comments</td>
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</table>

| The presentation volume was acceptable. | □ | □ | □ | □ | □ |
| Comments |

| The presentation was visually clear and logically organized. | □ | □ | □ | □ | □ |
| Comments |

| The review improved/reinforced your understanding of the material. | □ | □ | □ | □ | □ |
| Comments |

| The quality of the review packet was excellent. | □ | □ | □ | □ | □ |
| Comments |

Please fill out this evaluation, even if you plan to leave early. Thank you very much.
This page is intentionally left blank on purpose. You can use this page as scratch work if you want.
51C Midterm 2 Review Session

1. Consider the following carbonyls:

A. Rank in order of increasing stability (1=most stable).

B. Which compound is the most electrophilic?

C. Name compound 1 using IUPAC nomenclature.

2. Addition of water/alcohols to Type I and Type II carbonyls.

A. Predict the products. Which reaction (top or bottom) results in a more favorable addition?
B. Predict the products. Which reaction (top or bottom) results in a more favorable addition?

\[
\begin{align*}
\text{CH}_3\text{O}^- & \quad \text{CH}_3\text{OH} \\
\text{H}_3\text{O}^+ & \\
\end{align*}
\]

C. Predict the products. How do we drive the reactions to completion? Provide a detailed mechanism for the base promoted reaction.

\[
\begin{align*}
\text{H}_2\text{O} & \quad \text{H}_3\text{O}^+ \\
1 \text{ eq. } \cdot \text{OH} & \\
\end{align*}
\]
D. Help a food flavoring company convert their excess apple flavoring into pineapple flavoring via the transesterification reaction below. Include a mechanism below.

\[
\text{apple extract} \xrightarrow{\text{CH}_3\text{CH}_2\text{OH}} \xrightarrow{\text{TsOH, heat}} \text{pineapple extract} \quad \text{side product}
\]

**Mechanism:**

3. Consider the esterification of the following amide and the aminolysis of the resulting ester.

A.

\[
\]

B. Draw a detailed mechanism for the backward reaction.
4. Compare the alpha-halogenation of the following Type I compounds.

A.

\[ \text{Br}_2 \quad \xrightarrow{\text{H}_3\text{O}^+} \quad \text{OCH}_2 \]

\[ \text{Li}_2\text{CO}_3 \quad \xrightarrow{\text{LiBr}} \]

B.

\[ \text{Br}_2 \quad \xrightarrow{\text{NaOH}} \]

C.

\[ 1. \text{Br}_2 \quad \xrightarrow{\text{NaOH}} \quad 2. \text{H}_2\text{O}^+ \]
5. Provide reagents or predict the products for the following synthesis

A.

B.

1.) NaOEt
2.) Br
3.) NaOEt
4.) EtCl
5.) H₃O⁺, heat
6. Show the two organic starting materials that would be used to synthesize the following via a crossed aldol reaction.

A.

\[
\begin{array}{c}
\text{OH} \\
\text{C} \\
\text{O} \\
\text{\includegraphics{cyclohexanone.png}} \\
\end{array}
\]

B.

\[
\begin{array}{c}
\text{O} \\
\text{H} \\
\text{\includegraphics{cinnamic_acid.png}} \\
\end{array}
\]
7. Rank the following compounds by acidity.

8. Provide reagents for the following reactions.
   A.
   B.
9. Provide reagents and draw the mechanism for the following reaction.