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. In the benzoin condensation, cyanide anion catalyzes the reaction of two molecules of benzaldehyde to form one molecule of benzoic. The reaction occurs by way of benzaldehyde cyanohydrin and benzoic cyanohydrin intermediates. Write a curved-arrow mechanism for this reaction. Make sure to show each step of the reaction and all intermediates, products, charges, and important lone pairs of electrons. (6 pts)

\[
\begin{align*}
\text{benzaldehyde} & \rightleftharpoons \text{benzoin} \\
\text{KCN (catalyst)} & \rightleftharpoons \text{benzaldehyde cyanohydrin} \\
\text{H}_2\text{O} & \rightleftharpoons \text{benzoic cyanohydrin} \\
\end{align*}
\]

2. β-D-Glucose, a hemiacetal, can be converted into a mixture of acetics upon treatment with CH₃OH in the presence of acid. Write the structure of the oxocarbenium ion intermediate that leads to the formation of both isomeric acetics. (Smith 21.90, 4 pts)

\[
\begin{align*}
\text{β-D-Glucose} & \rightleftharpoons \text{oxocarbenium ion intermediate} \\
\text{CH}_3\text{OH}, \text{HCl} & \rightleftharpoons \text{acetals} + \text{water} \\
\end{align*}
\]