Which of the following compounds would you predict to react faster?

A

B

Would the following reaction give the same ether?
A. yes  B. no

What is the mechanism of this reaction?

Is this a good synthesis of this ether?
A. yes  B. no
What is the major product of the following reaction?

\[ \text{CH}_3\text{CO}_2\text{H} + \text{CH}_3\text{CH}_2\text{OH} \rightarrow \text{A} + \text{B} \]

An important property of these ethers (acetals) is that they can be converted back to the alcohol under mild conditions. How does this occur?

\[ \text{A} \text{CH}_3\text{CH}_2\text{OH} \rightarrow \text{H}_2\text{O} \]

What is the most stable cation, A or B?

\[ \text{A} \text{CH}_3\text{CH}_2\text{OH} \rightarrow \text{B} \text{CH}_3\text{CH}_2\text{OH} \]

How does this occur?

\[ \text{other products} \]

\[ \text{H}_2\text{O} \]
Which of the following compounds will react with the alcohol but not the ether?

A

\[
\begin{align*}
\text{CH}_3 \text{Li} & = + \text{Li} \\
\text{CH}_4 \quad & = \quad \text{Li} \\
\text{CH}_3 \text{S} & = \quad \text{O} \\
\text{O} & = \quad \text{S} \\
\text{O} & = \quad \text{S} \\
\end{align*}
\]

Ethers can be protecting groups for alcohols.

Equation:

\[
\text{H}_2\text{O} \quad \text{H} \quad \text{H}_2\text{O} \quad \text{H} \quad \text{H}_2\text{O}
\]

How are these removed?

\[
\text{H}_2\text{O} \quad \text{H} \quad \text{H}_2\text{O} \quad \text{H} \quad \text{H}_2\text{O}
\]

protected alcohols

Are there other alcohol protecting groups?

Equation:

\[
\text{H}_2\text{O} \quad \text{H} \quad \text{H}_2\text{O} \quad \text{H} \quad \text{H}_2\text{O}
\]

protected alcohol

How are these protected alcohols prepared?
The following transformation will not occur as shown. Why?

![Chemical Structures](image1.png)

How could the following transformation be performed? More than one step is necessary.

![Chemical Structures](image2.png)

How could the following transformation be performed? More than one step is necessary. What is the first step?

![Chemical Structures](image3.png)

What are the major products of the following reaction?

![Chemical Structures](image4.png)
Which carbon is attacked by the good nucleophile $I^-$?

\[ \text{Which of the following compounds is more acidic?} \]

\[ \text{A} \quad \text{B} \]