• Draw the constitutional formula of the major organic product formed in each of the following reactions.

\[ \text{Br}_2 (2 \text{ equiv.}) \]
The incomplete proposed mechanism for the reaction of 2-methyl-2-butene with HBr is shown below. Complete the mechanism by adding curly arrows to illustrate the bonding changes that take place.

Which one of the two reactants is the electrophile?
- Draw the constitutional structure of the major organic product formed in the following reactions. Indicate the correct isomer where appropriate.

<table>
<thead>
<tr>
<th>Reaction</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \text{C}<em>6\text{H}</em>{10} ) + H(_2) Pd catalyst</td>
<td></td>
</tr>
<tr>
<td>( \text{C} = \text{C} ) + HBr</td>
<td></td>
</tr>
<tr>
<td>( \text{C} = \text{C} - \text{H} ) + 2Br(_2)</td>
<td></td>
</tr>
</tbody>
</table>

**Marks**: 3
Give the constitutional formula and the name of the major organic product of each of the following reactions.

1. Na \( ^{\oplus} \) NH\(_2\)
2. CH\(_3\)CH\(_2\)I

Name:
- Use curly arrow notation to illustrate the mechanism of each of the following reactions.

\[
\begin{align*}
\text{CH}_3\text{=CH=CH}_2 + \text{HBr} &\rightarrow \text{CH}_2\text{=CH}=\text{CH}_2 + \text{Br}^- \\
\text{CH}_3\text{C}CH\text{=CH}_2 + \text{HCl} &\rightarrow \text{CH}_3\text{C}\text{Cl} + \text{H}^+ \\
\text{CH}_3\text{C}CH\text{=CH}_2 + \text{Cl}^- &\rightarrow \text{CH}_3\text{C}\text{Cl} + \text{OH}^- + \text{Cl}^- 
\end{align*}
\]