Lewis Acids/Bases:

1. Draw the product formed when (CH₃CH₂)₃N⁺, a Lewis base, reacts with each Lewis acid:

   a. B(CH₃)₃

   b. (CH₃)₃C⁺

   c. AlCl₃

Functional Groups:

2. Draw the structure of a compound fitting each description:

   a. An aldehyde with the molecular formula C₄H₆O
b. A ketone with the molecular formula $\text{C}_4\text{H}_8\text{O}$

c. A carboxylic acid with molecular formula $\text{C}_4\text{H}_8\text{O}_2$

d. An ester with molecular formula $\text{C}_4\text{H}_8\text{O}_2$

**Physical Properties**

3. Explain why $\text{CH}_3\text{CH}_2\text{NHCH}_3$ has a higher boiling point that $(\text{CH}_3)_2\text{N}$ even though they have the same molecular weight.
Reactivity

4. Label the electrophilic and nucleophilic sites in each molecule

a. CH₃CH₂OCH₂CH₂CH₃

b. CH₃COCl

c. CH₃CH(CH₃)CH₂I