**Functional Groups:** Identify all of the functional groups present in the molecules below. Make sure to include classification of alcohols and amines (1°, 2°, or 3°).
**Lewis Structures:** Draw Lewis Structures for the ions below and include formal charges.

a. Bicarbonate ion, $\text{HCO}_3^-$

b. Nitrate ion, $\text{NO}_3^-$

c. Azide ion, $\text{N}_3^-$

d. Propanoate ion, $\text{CH}_3\text{CH}_2\text{COO}^-$

e. Carbonic acid, $\text{H}_2\text{CO}_3$
**Resonance**: Use curved arrows to show the flow of electrons when going from one resonance structure to another for the benzyl carbanion.

![Benzyl Carbanion Resonance Structures](image)

Use curved arrows to show the flow of electrons when going from one resonance structure to another for 2-methylpropanoate ion below.

![2-Methylpropanoate Resonance Structures](image)

Use curved arrows to show the flow of electrons when going from one resonance structure to another for 2,4-pentanedione anion below.

![2,4-Pentanedione Resonance Structures](image)

Use curved arrows to show the flow of electrons when going from one resonance structure to another for the nitrate ion below.

![Nitrate Resonance Structures](image)
Hybridization of carbon atoms: Identify and label all of the carbon atoms highlighted in red with their respective hybridization (sp, sp\(^2\), or sp\(^3\)).

a.

b.

c.