

NAME:

HONORS CHEMISTRY

SECTION:

ACIDS AND BASES

A. Properties of Acids and Bases

1. List the letters of any of the letters in the box that are typical of an acid solution.

2. List the letters of any of the properties in the box that are typical of a base solution.

- a. Sour taste
- b. Turns phenolphthalein pink
- c. Conduct an electric current
- d. Salty taste
- e. Turns phenolphthalein colorless
- f. Reacts with active metals to produce H₂ gas
- g. Bitter taste
- h. Turns litmus paper blue
- i. Turns litmus paper red
- j. Slippery feel

B. Defining Acids and Bases

A Bronsted acid is defined as a substance that donates a proton (H⁺ ion). A Bronsted base accepts a proton from another substance. For each of the following reactions, draw an arrow below the equation to represent proton transfer between the reactants. Then, identify the conjugate acid-base pairs.

		Acid	Base
3. $\text{HCH}_3\text{COO} + \text{H}_2\text{O} \rightleftharpoons \text{H}_3\text{O}^+ + \text{CH}_3\text{COO}^-$	Conjugate pair	_____	_____
	Conjugate pair	_____	_____
4. $\text{HCl} + \text{SO}_3^{2-} \rightleftharpoons \text{HSO}_3^- + \text{Cl}^-$	Conjugate pair	_____	_____
	Conjugate pair	_____	_____
5. $\text{NH}_3 + \text{HNO}_2 \rightleftharpoons \text{NO}_2^- + \text{NH}_4^+$	Conjugate pair	_____	_____
	Conjugate pair	_____	_____
6. $\text{NH}_4^+ + \text{CO}_3^{2-} \rightleftharpoons \text{HCO}_3^- + \text{NH}_3$	Conjugate pair	_____	_____
	Conjugate pair	_____	_____
7. $\text{HClO} + \text{SO}_4^{2-} \rightleftharpoons \text{HSO}_4^- + \text{ClO}^-$	Conjugate pair	_____	_____
	Conjugate pair	_____	_____
8. $\text{HSO}_4^- + \text{OH}^- \rightleftharpoons \text{H}_2\text{O} + \text{SO}_4^{2-}$	Conjugate pair	_____	_____
	Conjugate pair	_____	_____