

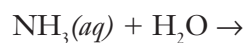
BRØNSTED – LOWRY ACID / BASE THEORY

NAME _____

SECTION _____

1. $\text{NH}_3(aq)$ solutions have $\text{pH} > 7$. How would you characterize such a solution? What ion would you expect to be present? Where might that ion come from?

2. Knowing that $\text{NH}_3(aq)$ solutions have $\text{pH} > 7$, complete the following chemical equation.



Describe the role that water plays in this reaction. How does the water interact with NH_3 ?

3. Describe what happens to the NH_3 in this reaction and what substance is produced.

The relationship between NH_3 and its product is said to be a conjugal one. The substances are said to be conjugates of each other. What is the conjugate acid for water? What is its conjugate base?

4. The transfer of a proton (H^+) from acid to conjugate base characterizes the Brønsted-Lowry Theory of acids and bases. Identify differences between the Brønsted-Lowry Theory and the Arrhenius Theory. Identify examples of Brønsted-Lowry bases that are not also Arrhenius bases. Identify examples of Brønsted-Lowry acids that are not also Arrhenius acids.
5. Identify the conjugate bases for each of the following acids.
- NH_4^+
 - H_3PO_4
 - H_2O
6. Identify the conjugate acid for each of the following bases.
- Br^-
 - HSO_4^-
 - H_2O