CONCEPT: BRONSTED LOWRY ACIDS & BASES

In 1923, Johannes Brønsted and Thomas Lowry developed a new set of definitions for acids and bases.

According to the Bronsted-Lowry definition, acids are considered _____ and bases are considered _____.

- Unlike Arrhenius acids and bases, they are not limited to aqueous solutions.
- Every Arrhenius acid is a Brønsted-Lowry acid (and likewise for the bases).
- Brønsted-Lowry acids and bases always occur in pairs called _____ .

EXAMPLE: Write the formula of the **conjugate base** for the following compound:

HSO_4^-

EXAMPLE: Write the formula of the **conjugate acid** for the following compound:

$V_2O_5^{2-}$

PRACTICE: Write the formula of the **conjugate base** for the following compound:

H_2Se

PRACTICE: Write the formula of the conjugate for the following compound:

NH_2NH_2

PRACTICE: BRONSTED LOWRY ACIDS & BASES

EXAMPLE: Identify the acid, base, conjugate acid and conjugate base in the following reactions:

a) $HF\ (aq) + H_2O\ (aq) \rightleftharpoons F^-\ (aq) + H_3O^+\ (aq)$

EXAMPLE: Identify the acid, base, conjugate acid and conjugate base in the following reactions:

a) $CN^-\ (aq) + H_2O\ (aq) \rightleftharpoons HCN\ (aq) + OH^-\ (aq)$

PRACTICE: Which of the following is a Bronsted-Lowry acid?

a) CH_4 b) HCN c) NH_3 d) Br_2

PRACTICE: Determine the chemical equation that would result when carbonate, CO_3^{2-}, reacts with water.

$$CO_3^{2-}\ (aq) + H_2O\ (l) \rightleftharpoons CO_3^-\ (aq) + OH^-$$