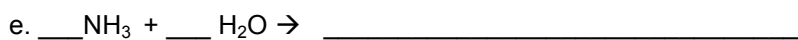


WS 20.2 Bronsted/Lowry Acid Base Theory

1) In BL theory, an acid _____ a H⁺ (proton), and a base _____ a H⁺ (proton).

2) Complete the following reactions, labeling each acid (A), base (B), conjugate acid (CA) and conjugate base (CB)



3) Look at the following reaction: HCO₃⁻¹ + OH⁻¹ <--> CO₃⁻² + H₂O

a) label A, B, CB, CA _____

b) Based on the acid strength of A vs. CA, is the forward or reverse reaction favored? Explain.

4) Ammonia is amphoteric, meaning it can function as both an acid and a base. Complete these reactions making ammonia a base in reaction a, then an acid in reaction b.

a) ___ NH₃ + ___ HCl → _____ Label A, B, CA, CB for both reactions.

b) ___ NH₃ + ___ H⁻¹ → _____ H⁻¹ (hydride) is a very rare and unstable ion of hydrogen.

5) ACID RAIN CHEMISTRY - The gases that produce acid rain are often referred to as NO_x and SO_x.

a) List three examples of these gases: _____

b) Coal burning power plants oxidize any sulfur (S) in the coal and burn it in air (O₂) to form SO₂ gas. The SO₂ is further oxidized by O₂ to form SO₃. The SO₃ gas can combine with water in clouds to form sulfuric acid. Write three balanced equations to show this process.

1) _____ 2) _____

3) _____

c) Industrial plants making fertilizer and detergents release NO_x gases into the air. Write a balanced equation for converting N₂O_{5(g)} into nitric acid by reacting it with water.

Fin!