

TEST 2
STUDY GUIDE

<i>Topic</i>	<i>Text Reference</i>
CHAPTER 15	
<ul style="list-style-type: none"> • Know the general characteristics of acids and bases • Know the Arrhenius definition of acids and bases • Know the Brønsted-Lowry definition of acids and bases • Identify Brønsted-Lowry acids and bases in a chemical equation • Know the Lewis definition of acids and bases • Identify Lewis acids and bases in a chemical equation • Determine relative acid and base strengths from chemical equations • Predict direction of a reaction based on acid and base strengths • Rank strength of acids based on their molecular structures • Rank strength of diprotic and polyprotic acids • Calculate $[H_3O^+]$ and $[OH^-]$ for any solution based on K_w constant • Calculate $[H_3O^+]$ and $[OH^-]$ for strong acids and bases from their concentration • Know pH and pOH scales and their relationship to acid and base characteristics of solutions • Calculate pH and pOH of a solution from given data • Rank acidity or basicity of solutions based on their pH or pOH values • Know what an acid ionization constant is and how its value determines the strength of an acid • Write the expression for acid ionization constant • Know the relationship of K_a to the pH and % ionization of an acid • Know the relationship of concentration to the pH and % ionization of an acid • Calculate the acid ionization (K_a) constant given the pH of a weak acid solution • Calculate the pH and % ionization of a weak acid solution given the acid ionization constant (K_a) • Calculate pH of mixture of acids: 2 strong, strong and weak and 2 weak • Know the equilibria for polyprotic acids • Calculate the concentration of various species for a diprotic acid given K_{a1} and K_{a2} • Write the expression for base dissociation constant • Calculate the concentration of various species in a weak base solution given K_b • Calculate K_b from K_a and vice versa • Write equations for the hydrolysis of salts of weak acids and bases • Predict whether a salt solution is acidic, basic or neutral • Calculate the pH of a salt solution 	<p>Notes, 15.2</p> <p>15.3</p> <p>15.3</p> <p>15.3</p> <p>15.11</p> <p>15.11</p> <p>Notes</p> <p>Notes</p> <p>15.10</p> <p>15.9</p> <p>15.5</p> <p>15.7</p> <p>15.4</p> <p>15.5 & 15.7</p> <p>Notes</p> <p>15.4</p> <p>15.4</p> <p>Notes</p> <p>Notes</p> <p>15.6</p> <p>15.6</p> <p>Notes</p> <p>15.9</p> <p>15.9</p> <p>15.7</p> <p>15.7</p> <p>15.8</p> <p>15.8</p> <p>15.8</p> <p>15.8</p>