Honour Chemistry Unit 6 Outline: Acids and Bases

Chapter 16: Acids and Bases

Classes	Topics	Suggested Reading	✓	Assignments 🗸
1	Physical and Chemical Properties of Acids and Bases, Arrhenius Concept, Brønsted-Lowry Model, Hydronium Ion, Conjugate Acid, Conjugate Base, Conjugate Acid-Base Pair, Acid Dissociation Constant (K_a), Base Dissociation Constant (K_b)	16.1: Brønsted Acids and Bases (pg. 530 to 531)		pg. 568 #1 to 8
2	Autoionization of Water, pH and pOH Scales, pH = $-\log [H_3O^+]$, pOH = $-\log [OH^-]$, $K_w = [H_3O^+][OH^-]$, pH + pOH = 14, Strong Acid, Weak Acid, Relative Strength of Acids and Conjugate Bases, Monoprotic Acids versus Diprotic Acids, Amphoteric Substances, Common Strong Acids, Major Species of Strong Acids, pH of Strong Acids, Oxoacids, Organic Acids, Carboxyl Group	 16.2: The Acid-Base Properties of Water (pg. 531 to 533) 16.3: pH-A Measure of Acidity (pg. 533 to 536) 16.4: Strength of Acids and Bases (pg. 536 to 540) 		pg. 568–569 #9 to 24 pg. 569 #25 to 36; pg. 571 #86
3	Using Approximation to calculate $[H_3O^+]$ of Weak Acids, pH of Weak Acids, % Dissociation (Ionization) = $\frac{[H_3O^+]}{[HA]} \times 100\%$, K_a and Precent Dissociation, Polyprotic Acids, Diprotic and Triprotic Acids, pH of Polyprotic Acid, Amphoteric Species of Weak Polyprotic Acids, Strong Bases, Slaked Line, Lime-soda Process, Weak Bases, pH of Strong and Weak Bases, $K_w = K_a \times K_b$, Using Approximation to calculate [OH ⁻] of Weak Bases	 16.5: Weak Acids and Acid Ionization Constants (pg. 540 to 530) 16.6 & 16.7: Weak Bases and Base Ionization Constants & The Relationship Between the Ionization Constants of Acids and Their Conjugate Bases (pg. 551 to 554) 		pg. 569–570 #37 to 52; pg. 571 #93 pg. 570 #53 to 58; pg. 571 #94
5	Salt, Salt as Weak Bases, Hydrolysis and Percent Hydrolysis, Salts that produces Acidic Solutions	16.9: Acid-Base Properties of Salts (pg. 557 to 560)		pg. 570–571 #65, 68, 71 to 74
	Chapter 16 Take-Home Quiz (covers 16.1 to 16.7) (B Block: May 5, Thursday) (D Block: May 6, Friday)	Chapter 16 Homework Due: (B Block: May 10, Tuesday) (D Block: May 11, Wednesday)		Take-Home Quiz Due: May 9, Monday

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Chapter 17: Acid-Base Equilibria

Classes	Topics	Suggested Reading	✓	Assignments	✓
1	Buffered Solution, pH (Titration) Curve, Equivalence Point, Buffer Zone of a Titration Curve, millimol (mmol), Titrations between (Strong Acid with Strong Base, Weak Acid with Strong Base, Weak Base with Strong Acid), Acid-Base	17.2: Buffer Solutions (pg. 575 to 576) 17.3: A Closer Look at Acid-Base Titrations (pg. 580 to 586)		pg. 604 #1, 5 and 6 pg. 604 #17 to 20a pg. 604 #21 to 24	
2	Indicators and their pH Ranges, Phenolphthalein, Bromothymol Blue, End Point and Colour Change, Weak Acid and Weak Base Equilibria	17.4: Acid-Base Indicators (pg. 586 to 589)			
3	Lab #10: Weak Acid (Aspirin) and Strong Base Titration (B Period: May 12, Thursday) (D Period: May 13, Friday)			Lab Report #10 Due: (B Period: May 26, Thursday) (D Period: May 25, Wednesday)	
4	Unit 6 Test (B Period: May 19, Thursday) (D Period: May 20, Friday)	Chapter 17 Homework Due: (B Period: May 17, Tuesday) (D Period: May 18, Wednesday)			