Faculty Submitting: Allison Kelly

Specify here whether "Pre" or "End" of Unit and the Unit #: Pre Unit 13

LOs: Identify weak acids and bases, conjugate pairs, rank them in terms of acidity using Kas and/or molecular structure *Lewis Acids/Bases* *Describe and define the autoionization of water, pH, pOH, and the acid/base dissociation constants*	
Unit 13_ Question 1	**Canvas Question Type:** Matching
	Bronsted-Lowry Acid – A compound that donates a proton Bronsted-Lowry Base – A compound that accepts a proton Lewis Acid – A species that accepts an electron pair Lewis Base – A species that donates an electron pair Amphoteric – a species that can act as an acid or as a base Conjugate Pair – An acid-base pair that differs by only a proton
Read More	https://openstax.org/books/chemistry-2e/pages/14-1-bronsted-lowry-acids-and-bases https://openstax.org/books/chemistry-2e/pages/15-2-lewis-acids-and-bases
Unit 13_ Question 2	**Canvas Question Type:** Fill in Multiple Blanks GROUP
2a	Acid [ionization] is the reaction between a Bronsted-Lowry [acid] and water
2b	Base [ionization] is the reaction between a Bronsted-Lowry [base] and water
Read More	https://openstax.org/books/chemistry-2e/pages/14-1-bronsted-lowry-acids-and-bases
Unit 13_ Question 3	**Canvas Question Type:** Multiple Choice
	Which of the following reactions is the autoionization of water?
	Correct Answer: $H_2O_{(l)} + H_2O_{(l)} \rightleftharpoons H_3O^+_{(aq)} + OH^-_{(aq)}$ Wrong Answers: $H_2O_{(l)} + H_3O^+_{(aq)} \rightleftharpoons H_4O^{2+}_{(aq)} + OH^-_{(aq)}$

	$H_2O_{(l)} + OH^-_{(aq)} \rightleftharpoons OH^-_{(aq)} + H_2O_{(l)}$ $H_2O_{(l)} + H_3O^+_{(aq)} \rightleftharpoons H_3O^+_{(aq)} + H_2O_{(l)}$
Read More	https://openstax.org/books/chemistry-2e/pages/14-1-bronsted-lowry-acids-and-bases
Unit 13_ Question 4	**Canvas Question Type:** Multiple Choice
	What is K_w at 25 °C?
	Correct Answer: All of the other answer choices are correct Wrong Answers: $K_a \times K_b$ (where K_a and K_b are for a conjugate pair) $[H_3O^+][OH^-]$ 1.0×10^{-14}
Read More	https://openstax.org/books/chemistry-2e/pages/14-1-bronsted-lowry-acids-and-bases https://openstax.org/books/chemistry-2e/pages/14-3-relative-strengths-of-acids-and-bases
Unit 13_ Question 5	**Canvas Question Type:** Multiple Choice
	Choose the correct expression for K_a
	Correct Answer: $\frac{[H_3O^+][A^-]}{[HA]}$ Wrong Answers: $\frac{[H_3O^+][A^-]}{[HA][H_2O]}$ $[H_3O^+][A^-]$ $\frac{[HA][H_2O]}{[H_3O^+][A^-]}$
Read More	https://openstax.org/books/chemistry-2e/pages/14-3-relative-strengths-of-acids-and-bases

Unit 13_ Question 6	**Canvas Question Type:** Multiple Drop Down
	Acidic – [DropOne] ; [DropTwo] Basic – [DropThree] ; [DropFour] Neutral – [DropFive] ; [DropSix]
	<u>DropOne</u> Correct Answer: pH < 7 Wrong Answers: pH = 7 pH > 7 <u>DropTwo</u> Correct Answer: $[H_3O^+] > [OH^-]$ Wrong Answers: $[H_3O^+] < [OH^-]$ $[H_3O^+] = [OH^-]$ <u>DropThree</u> Correct Answer: pH > 7 Wrong Answers: pH < 7 pH = 7 <u>Drop Four</u> Correct Answer: $[H_3O^+] < [OH^-]$ Wrong Answers: $[H_3O^+] = [OH^-]$ $[H_3O^+] > [OH^-]$ <u>DropFive</u> Correct Answer: pH = 7

	Wrong Answer: pH < 7 pH > 7 DropSix Correct Answer: $[H_3O^+] = [OH^-]$ Wrong Answer: $[H_3O^+] > [OH^-]$ $[H_3O^+] < [OH^-]$
Read More	https://openstax.org/books/chemistry-2e/pages/14-2-ph-and-poh
Unit 13_ Question 7	**Canvas Question Type:** Multiple Fill in the Blanks **QUESTION GROUP**
7a	A stronger base has a [larger] ionization constant than does a [weaker] base. The stronger the base, the [weaker] the conjugate acid.
7b	A stronger acid has a [larger] ionization constant than does a [weaker] acid. The stronger the acid, the [weaker] the conjugate base.
Read More	https://openstax.org/books/chemistry-2e/pages/14-3-relative-strengths-of-acids-and-bases#CNX_Chem_14_03_strengths
Unit 13_ Question 8	**Canvas Question Type:** Multiple DropDowns
	The strength of binary acids [DropOne] across a period The strength of binary acids [DropTwo] down a group DropOne Correct Answer: Increases Wrong Answer: Decreases DropTwo Correct Answer: Decreases Wrong Answer: Increases
Read More	https://openstax.org/books/chemistry-2e/pages/14-3-relative-strengths-of-acids-and-bases#CNX_Chem_14_03_AcidpH