

pH and Indicators; Determination of the K_a 's for Weak Acids; Potentionmetric Titrations of Strong and Weak Acids

Date: _____ Name: _____

Partner: _____

OBJECT: To determine the pK_a 's and useful pH ranges of several indicators.

To determine the K_a for weak acids from pH measurements of dilute solutions of acetic acid, propionic acid and phosphoric acid.

To study the tirations of a strong acid, a weak acid and a polyprotic acid with a strong base.

PROCEDURE: As in the Chemistry 1210 lab manual, pages _____.

Part II Data and Calculations:

Solution Name	Molarity of Weak Acid	Measured pH	Calculated $[H^+]$	Calculated K_a	Literature K_a
Acetic Acid					
Phosphoric Acid					
Propionic Acid					
Reference for Literature K_a including Name of book, edition, and page:					

Calculations (for all three acids):

Part III Attach the data on separate sheets to the back of this handout.
Graph and label the three titration curves from the data obtained in the lab.

Part I**Circle the pH (range) at which each indicator appears to change from its acidic form to its basic form**

Name of Indicator	pH of buffers										Unknown solution(s)		Estimated pKa	Lit pKa
	1	2	3	4	5	6	7	8	9	10	#__	#__		
Unknown Indicator #_____														
Unknown Indicator #_____														
Estimated pH of unknown solution(s) based on observed colours														
Reference including Name, edition and page for lit pKa's														

CONCLUSION:

QUESTIONS: