

Acid-Base Equilibria: Chemical Reaction Review - Answer Key

Write the generic chemical reaction for the dissociation of a weak acid.



charge on ions is very important - do not forget to include it!!!

Write a chemical reaction for the dissociation of a specific weak acid.

Name of weak acid: acetic acid

Acid dissociation constant, $K_a = 1.8 \times 10^{-5}$ $pK_a = 4.74$



Write the generic chemical reaction for the dissociation of a weak base.



Write a chemical reaction for the dissociation of a specific weak base.

Name of weak base: methylamine

Base dissociation constant, $K_b = 5.0 \times 10^{-4}$ $pK_b = 3.30$



Write the generic chemical reaction for a buffer composed of a weak acid and its conjugate base. For a weak acid and its conjugate base (or its salt), the K_a of the weak acid controls the system:



Write the chemical reaction for a buffer composed of a hypochlorous acid and sodium hypochlorite. What is the pH of this system for 0.10M hypochlorous acid and 0.10M sodium hypochlorite?



since the salt/acid ratio is one

Write a generic chemical reaction for the hydrolysis of a weak acid anion, A^- .



What is the pH of the resulting solution? acidic neutral **basic**

Write a chemical reaction for the hydrolysis of your favorite weak acid anion.

Name of anion: **fluoride**



Write a generic chemical reaction for the hydrolysis of a weak base cation, BH^+ .



What is the pH of the resulting solution? **acidic** neutral basic

Write a chemical reaction for the hydrolysis of your favorite weak base cation.



make sure that the charge balances too!!!

Write a generic chemical reaction for acid-base neutralization. This is what happens in an acid-base titration.



Complete the following neutralization reactions. Does the salt hydrolyze? If so, write the hydrolysis reaction.

