AP CHEMISTRY CHAPTER 15 PRACTICE QUIZ

1. Propanoic acid, HC3H5O2, ionizes in water according to the equation below.

HC3H5O2(aq) ↔ C3H5O2-(aq) + H+(aq) Ka = 1.35 x 10-5

1. Write the Ka expression for the reaction
2. Calculate the pH of a 0.265 M solution of propanoic acid
3. 100. mL of 0.265 M solution of propanoic acid is combined with 100. mL of a 0.500 M solution of sodium propanoate, NaC3H5O2.
4. What is the concentration of the propanoic acid once the solution is combined?
5. What is the concentration of the propanoate ion once the solution is combined?
6. What is the pH of this described solution?
7. What is the change in pH of the solution described in part c if 0.010 mol of solid NaOH is added to 200 mL of this solution? Assume that no change in volume occurs.

ANSWERS:

1. Ka = [H+][C3H5O2-]/[ HC3H5O2]
2. pH = 2.723
3. (i) .133 M HC3H5O2

(ii) .250 M NaC3H5O2

(iii)pH = 5.144

1. pH =5.430