AP Chemistry Acid/Base Equilibrium Quiz Name:_____ Class:_____

Assume all of the following experiments take place at 25°C. 34 points

1. A 300.0 mL solution of 0.090 M formic acid (HCOOH) was prepared with distilled water. A pH meter was used to test the pH of the solution.
   a. What was the pH? (5 pts)
   b. If a 5.00 M stock solution were available, how would you prepare the solution tested? (3 pts)

2. A 3.968 g sample of potassium formate (KCOOH) was added to a beaker and brought up to a volume of 250.0mL with dH_2O. What would be the pH of this solution at equilibrium? (6 pts)

3. 35.37 mL of 8.00M formic acid and 9.13 g of potassium formate were added to 400.00 mL of distilled water. Assume the addition of the salt does not contribute to the volume of the solution. What is the pH of this solution? (6 pts)

4. 80.00 mL of 0.10 M formic acid was titrated with 0.170 M NaOH. After the addition of 41.02 mL of base, what is the pH? (6 points)

5. Ascorbic acid ($HC_6H_7O_6$) is also known as Vitamin C. A 0.34 M ascorbic acid solution was made by crumbling Vitamin C tablets into water. When the solution reaches equilibrium what is the $[HC_6H_7O_6]$, $[C_6H_7O_6^-]$, $[C_6H_6O_6^{2-}]$, and pH? (8 points)

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