

CHEM 121
Quiz 9

Name _____

Due in Class April 10, 2009

Complete the following problems. Clearly justify any assumptions made. Work must be shown to earn partial credit for each problem. You may use your book and notes, but **you may not seek help from anyone other than Dr. Lamp.** Failure to abide by this rule will result in a zero for the quiz and the Dean of Students office will be notified. This signed sheet **must** accompany your quiz. If you have a solid understanding of the approach, you should be able to complete these problems in 20 minutes or less without your book and notes.

I affirm that the work submitted is my own and that I received help from no one other than Dr. Lamp. I realize that failure to follow the rules above will result in a zero for the quiz and will be reported as an act of academic dishonesty.

Signature

Date

1. For a maximum of five points each, work the three problems on Exam 3 that you chose not to have graded. **Staple** the work to this sheet. (15 points)
2. A solution is prepared by dissolving 2.00 grams each of benzoic acid ($K_a = 6.3 \times 10^{-5}$) and sodium benzoate in 750 mL of solution. The formula for benzoic acid is $\text{HC}_7\text{H}_5\text{O}_2$.
 - a. What is the pH of this solution? (4 points)
 - b. You need to adjust the pH of this solution to 4.00. You have 1 L each of 1.00 M HCl and 1.00 M NaOH. Which solution, and how much, would you add to the 750.0 mL of the solution in part (a) to accomplish this? (6 points)