Buffer Systems: Acetic Acid and Sodium Acetate

**Task #1:** Prepare a buffer solution of pH = 4.5 by addition of ___ g of sodium acetate (MM = 82.03 g.mol) to 300 ml of 1M acetic acid solution. Measure the pH of the solution. Compute the amount of sodium acetate needed using the Henderson Hasselbalch equation. (handout)

**Task #2:** Titrate Acetic Acid Solution.

(a) Use 100 ml of 1M acetic acid. Titrate the solution with small amount of 1M NaOH. Measure the pH as a function of “ml NaOH added”.

(b) Use 100 ml of 1M acetic acid. Titrate the buffer solution with small amount of 1M HCl. Measure the pH as a function of “ml HCl added”.

**Task #3:** Titrate Acetic Acid Buffer Solution.

(a) Use 100 ml of your acetate buffer. Titrate the buffer solution with small amount of 1M NaOH. Measure the pH as a function of “ml NaOH added”.

(b) Use 100 ml of your acetate buffer. Titrate the buffer solution with small amount of 1M HCl. Measure the pH as a function of “ml HCl added”.