Announcements

- Turn on the Clicker (the red LED comes on).
- Push “Join” button followed by “20” followed by the “Send” button (switches to flashing green LED if successful).

- Exam 3 on chapters 15 and 16 is Thursday.
- Please do not enter room until asked to.
- Discussion will be for review.

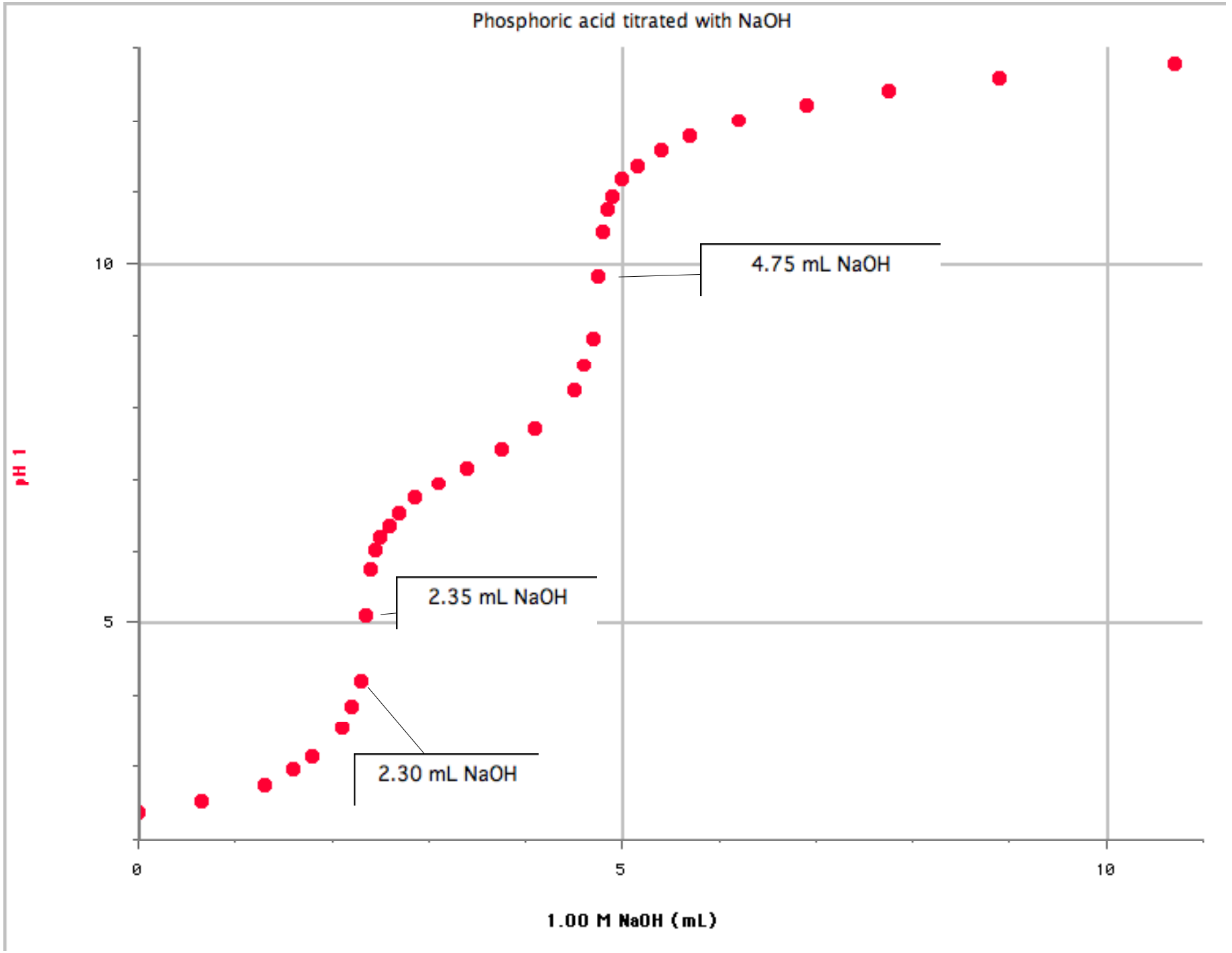
Review

- pH of salt solutions
  - Salts of conjugates of weak acids make basic solutions (examples: NaF, KF, $NaNO_2$, $KHSO_4$)
  - Salts of conjugates of weak bases make acidic solutions (example: NH_4Cl)
  - Salts of conjugates of strong acids and bases do not affect pH (example: NaCl)
- conjugate acid base pairs, $K_W = K_aK_b$.
- Buffers
  - Buffer = a solution that resists a change in its pH when either an acid or base is added.
  - Can calculate pH using standard equilibrium calculations
  - If salt and acid reasonably high easier to use Henderson-Hasselbach: $pH = pK_W + \log([base]/[acid])$

Acid Base Titration Curves

Fig 16.18

Fig 16.19


Phosphoric acid titrated with NaOH
4.75 mL NaOH
2.35 mL NaOH
2.30 mL NaOH
pH 1
10
5
0
5
10
1.00 M NaOH (mL)

Organic/Biological Complex Ions

Fig. 16.26-Heme group

Fig. 16.24-Chlorophyll