





7. A  $7.50 \times 10^{-5}$  M solution of potassium permanganate has a transmittance of 36.4% when measured in a 1.05 cm cell at a wavelength of 525 nm. Calculate
- The absorbance of this solution
  - The molar absorptivity of  $\text{KMnO}_4$  using Beer's law
8. 50.00 mL of 0.0500 M HCl is titrated with a 0.1000 M NaOH solution. Consider the processes taking place in this solution before, during, and after the equivalence point and determine the pH of the solution at the following amounts of titrant have been added.
- 10.00 mL
  - 35.00 mL
  - $V_e$

9. 50.00 mL of 0.100 M acetic acid is titrated with a 0.200 M NaOH solution. Consider the processes taking place in this solution before, during, and after the equivalence point and determine the pH of the solution at the following amounts of titrant have been added.

a. 0.00 mL

b. 10.00 mL

c. 30.00 mL

d.  $V_e$

10. 50.00 mL of 0.050 M NaCN is titrated with a 0.100 M HCl solution. Consider the processes taking place in this solution before, during, and after the equivalence point and determine the pH of the solution at the following amounts of titrant have been added.

a. 0.00 mL

b. 10.00 mL

c. 26.00 mL

d.  $V_e$