

LECTURE 24

1. 50.0 mL of 0.10 M acetic acid ($\text{CH}_3\text{COOH (aq)}$) is titrated 0.20 M NaOH (aq). The K_a of acetic acid is 1.74×10^{-5} .

(a) Calculate the volume of 0.20 M NaOH required to reach the equivalence point.

(b) Calculate the pH at the equivalence point.

(c) Calculate the pH after the addition of 2.00 mL of NaOH past the equivalence point.

2. Methylamine a weak base with a K_b of 5.6×10^{-4} . A 75 mL sample of 0.500 M solution of methylamine in water is titrated with a 0.205 M solution of HCl, a strong acid. Calculate the pH of the solution at the given point during the titration.

(a) before any acid is added.

(b) at the half-equivalence point.

(c) at the equivalence point.

(d) 1.00 mL past the equivalence point.

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