

Homework No. 2

1. Give the pH values corresponding to each of the following values of $[H^+]$:

(a) 1.00×10^{-4} mol/L, (b) 1.00×10^{-8} mol/L, (c) 5.63×10^{-9} mol/L, (d) 3.67×10^{-6} mol/L.

2. In a 1 molar solution of acetic acid (containing 1 mol of acetic acid per liter of solution) only about 0.5% of the acid is ionized to produce an acetate ion and a hydrogen ion. Calculate the number of moles of H^+ in a liter of such a solution.

3. Calculate the pH of a 0.30 M solution of acetic acid, $C_2H_3O_2H$, at $25^\circ C$. K_a for acetic acid at $25^\circ C$ is 1.8×10^{-5} . $CH_3COOH + H_2O \rightleftharpoons CH_3COO^- + H_3O^+$