PRACTICE: WEAK ACID-BASE EQUILIBRIA CALCULATIONS 1

EXAMPLE 1: What is the original molarity of a solution of weak acid with a K_a of 4.7×10^{-3} and pH of 4.12 at 25 ºC?

EXAMPLE 2: You are seeking to identify an unknown monoprotic acid by determining its K_a value. A 6.05×10^{-2} M solution of this unknown monoprotic acid has a pH of 2.122. Determine the K_a of this unknown acid?

a) 4.47×10^{-4}

b) 9.42×10^{-4}

c) 2.85×10^{-2}

d) 1.08×10^{-3}

e) 3.58×10^{-1}

PRACTICE: WEAK ACID-BASE EQUILIBRIA CALCULATIONS 2

EXAMPLE: A weak acid has a pKa of 5.35. What is the hydronium ion concentration in a 0.10 M solution of this weak acid?

a) 5.4×10^{-4} M

b) 6.3×10^{-6} M

c) 3.5×10^{-5} M

d) 2.3×10^{-6} M

e) 4.5×10^{-6} M

f) 6.7×10^{-4} M

PRACTICE: The pH of an aqueous 0.10 M nitrite ion is 8.17. What is the base dissociation constant of the base?

a) $4.6 \times 10^{\mathbf{-16}}$

b) $2.2 \times 10^{\mathbf{-11}}$

c) $1.6 \times 10^{\mathbf{-6}}$

d) $1.6 \times 10^{\mathbf{-5}}$

e) $1.2 \times 10^{\mathbf{-3}}$