



- Which of the following solutions has the highest pH?
 - 10 M HNO_3
 - 0.010 M KOH
 - 0.010 M $\text{Ca}(\text{OH})_2$
 - 0.10 M HNO_3
- Indicate which of the following salts will form an acidic solution when dissolved in water:
 - KCl
 - NaNO_2
 - NH_4NO_3
 - None of the above, as they are all, salts and solutions, neutral.
- Indicate which of the following salts will form a basic solution when dissolved in water:
 - NaCl
 - KNO_2
 - NaNO_3
 - $\text{CH}_3\text{COO Na}$
- The pH of a 0.50 M solution of a given acid, HA, is pH = 5.20. Calculate the acidic equilibrium constant, K_a of HA.
 - 3.98×10^{-11}
 - 6.3×10^{-6}
 - 8.85×10^{-10}
 - None of the above
- Which of the following values represents the weakest acid?
 - $\text{p}K_a = 2.05$
 - $\text{p}K_a = 8.10$
 - $K_a = 1.8 \times 10^{-4}$
 - $K_a = 6.8 \times 10^{-5}$
- What is the pH of a 0.5 M solution of NaCN? [$K_a(\text{HCN}) = 4.9 \times 10^{-10}$]
 - 2.5
 - 7.0
 - 4.7
 - 9.3
- Calculate the pH of a solution containing 0.15 mole of NH_4Cl and 0.20 mole of NH_4OH per litre. $K_b(\text{NH}_4\text{OH}) = 1.85 \times 10^{-5}$.
 - 4.61
 - 7.00
 - 4.73
 - 9.39
- Given a solution with a pH = 4.37, calculate the hydroxide ion concentration.
 - 1.00×10^{-14} M
 - 4.25×10^{-5} M
 - 2.34×10^{-10} M
 - 9.63×10^{-10} M