Chemistry Organic Of Fundamentals about Worksheet الملف

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8 Ionic Equilibrium

The pH of 10^{-5}M KOH solution will be

a) 9 b) 5 c) 19 d) none of these

$H_2PO_4^-$ the conjugate base of

a) PO_4^{3-} b) P_2O_5 c) H_3PO_4 d) HPO_4^{2-}

Which of the following can act as Lowry – Bronsted acid as well as base?

a) HCl b) SO_4^{2-} c) HPO_4^{2-} d) Br^-

The pH of an aqueous solution is Zero. The solution is

a) slightly acidic b) strongly acidic c) neutral d) basic

The hydrogen ion concentration of a buffer solution consisting of a weak acid and its salts is given by

a) $[H^+]=\frac{K_a[acid]}{[salt]}$ b) $[H^+]=K_a[salt]$ c) $[H^+]=K_a[acid]$ d) $[H^+]=\frac{K_a[salt]}{[acid]}$

Which of the following relation is correct for degree of hydrolysis of ammonium acetate?

a) $h=\sqrt{\frac{K_h}{C}}$ b) $h=\sqrt{\frac{K_a}{K_b}}$ c) $h=\sqrt{\frac{K_w}{K_a.K_b}}$ d) $h=\sqrt{\frac{K_a.K_b}{K_w}}$

Dissociation constant of NH_4OH is 1.8×10^{-5} the hydrolysis constant of NH_4Cl would be

a) 1.8×10^{-19} b) 5.55×10^{-10} c) 5.55×10^{-5} d) 1.80×10^{-5}

The solubility of $BaSO_4$ in water is $2.42\times10^{-3}gL^{-1}$ at 298K. The value of its solubility product (K_{sp}) will be (NEET -2018). (Given molar mass of $BaSO_4$=233g mol^{-1})

a) $1.08\times10^{-14}mol^2L^{-2}$ b) $1.08\times10^{-12}mol^2L^{-2}$

c) $1.08\times10^{-10}mol^2L^{-2}$ d) $1.08\times10^{-8}mol^2L^{-2}$

pH of a saturated solution of $Ca(OH)_2$ is 9. The Solubility product (K_{sp}) of $Ca(OH)_2$

a) 0.5×10^{-15} b) 0.25×10^{-10}

c) 0.125×10^{-15} d) 0.5×10^{-10}

Conjugate base for Bronsted acids H_2O and HF are

a) OH^- and H_2FH^+, respectively b) H_3O^+ and F^-, respectively

c) OH^- and F^-, respectively d) H_3O^+ and H_2F^+, respectively

Which will make basic buffer?

a) 50 mL of 0.1M NaOH+25mL of 0.1M CH_3COOH

b) 100 mL of 0.1M CH_3COOH+100 mL of 0.1M NH_4OH

c) 100 mL of 0.1M HCl+200 mL of 0.1M NH_4OH

d) 100 mL of 0.1M HCl+100 mL of 0.1M NaOH

. The solubility of AgCl (s) with solubility product 1.6×10^{-10} in 0.1M NaCl solution would be

a) 1.26×10^{-5}M b) 1.6×10^{-9}M c) 1.6×10^{-11}M d) Zero

. If the solubility product of lead iodide is 3.2×10^{-8}, its solubility will be

a) 2×10^{-3}M b) 4×10^{-4}M c) 1.6×10^{-5}M d) 1.8×10^{-5}M

. MY and NY_3, are insoluble salts and have the same K_{sp} values of 6.2×10^{-13} at room temperature. Which statement would be true with regard to MY and NY_3?

a) The salts MY and NY_3 are more soluble in 0.5M KY than in pure water

b) The addition of the salt of KY to the suspension of MY and NY_3 will have no effect on their solubility's

c) The molar solubilities of MY and NY_3 in water are identical

d) The molar solubility of MY in water is less than that of NY_3

. What is the pH of the resulting solution when equal volumes of 0.1M NaOH and 0.01M HCl are mixed?

a) 2.0 b) 3 c) 7.0 d) 12.65

. The dissociation constant of a weak acid is 1×10^{-5}. In order to prepare a buffer solution with a pH = 4, the $\frac{[Acid]}{[Salt]}$ ratio should be

a) 4:3 b) 3:4 c) 10:1 d) 1:10

Concentration of the Ag^+ ions in a saturated solution of $Ag_2C_2O_4$ is 2.24×10^{-4}mol L^{-1} solubility product of $Ag_2C_2O_4$ is (NEET – 2017)

a) 2.42×10^{-8} mol^3L^{-3} b) 2.66×10^{-12} mol^3L^{-3}

c) 4.5×10^{-11} mol^3L^{-3} d) 5.619×10^{-12} mol^3L^{-3}

Following solutions were prepared by mixing different volumes of NaOH of HCl different concentrations. (NEET – 2018)

i. 60 mL $\frac{M}{10}$HCl + 40mL $\frac{M}{10}$ NaOH ii. 55 mL $\frac{M}{10}$HCl + 45 mL $\frac{M}{10}$ NaOH

iii. 75 mL $\frac{M}{5}$HCl + 25mL $\frac{M}{5}$ NaOH iv. 100 mL $\frac{M}{10}$HCl + 100 mL $\frac{M}{10}$ NaOH

pH of which one of them will be equal to 1?

a) iv b) i c) ii d) iii

Which of the following fluro compounds is most likely to behave as a Lewis base?

(NEET – 2016)

a) BF_3 b) PF_3 c) CF_4 d) SiF_4

Which of these is not likely to act as Lewis base?

a) BF_3 b) PF_3 c) CO d) F^-

The aqueous solutions of sodium formate, anilinium chloride and potassium cyanide are respectively

a) acidic, acidic, basic b) basic, acidic, basic

c) basic, neutral, basic d) none of these

The percentage of pyridine (C_5H_5N) that forms pyridinium ion (C_5H_5NH) in a 0.10M aqueous pyridine solution (K_b for $C_5H_5N = 1.7 \times 10^{-9}$) is

a) 0.006% b) 0.013% c) 0.77% d) 1.6%

Equal volumes of three acid solutions of pH 1,2 and 3 are mixed in a vessel. What will be the H^+ ion concentration in the mixture?

a) 3.7×10^{-2} b) 10^{-6} c) 0.111 d) none of these