Date Planned : __ / __ / __	Daily Tutorial Sheet-7	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-2	Exact Duration :_____

86. In a mixture of acetic acid and sodium acetate the ratio of concentration of the salt to the acid is increased ten times. Then, the pH of the solution :

(A) increases by one **(B)** decreases by one

(C) decreases ten fold **(D)** increased ten fold

87. Relation between hydrolysis constant and dissociation constant are given. Which is the correct formula for $MgCl_2$?

(A) $K_h = \frac{K_w}{K_a}$ **(B)** $K_h = \frac{K^2_w}{K_b}$ **(C)** $K_h = \frac{K_w}{K_a \times K_b}$ **(D)** $K_w = \frac{K_h}{K_b}$

88. Out of the following, amphiprotic species are :

I. $H_2PO_2^-$ **II.** HPO_3^{2-} **III.** HCO_3^-

IV. $CH_3CO_2^-$ **V.** HPO_4^{2-}

(A) I, II, III, IV **(B)** I, V **(C)** III and V **(D)** II, III, V

89. **Statement 1:** The pH of a buffer solution containing equal moles of acetic acid and sodium acetate is 4.8. (pK_a of acetic acid is 4.8)

Statement 2: The ionic product of water at 25°C is $10^{-14}\ mol^2\ L^{-2}$.

(A) Statement-1 is True, Statement-2 is True and Statement-2 is a correct explanation for Statement-1

(B) Statement-1 is True, Statement-2 is True and Statement-2 is NOT a correct explanation for Statement-1

(C) Statement-1 is True, Statement-2 is False

(D) Statement-1 is False, Statement-2 is True

90. HX is a weak acid ($K_a = 10^{-5}$). It forms a salt NaX 0.1 M on reacting with caustic soda. The degree of hydrolysis of NaX is :

(A) 0.01 **(B)** 0.0001 **(C)** 0.1 **(D)** 0.5

91. The degree of hydrolysis in hydrolytic equilibrium $A^- + H_2O \rightleftharpoons HA + OH^-$ at salt concentration of 0.001 M is : ($K_a = 1\times10^{-5}$)

(A) 1×10^{-3} **(B)** 1×10^{-4} **(C)** 5×10^{-4} **(D)** 1×10^{-6}

92. The pK_b value of NH_3 is 5. Calculate the pH of the buffer solution, 1 L of which contains 0.01 M NH_4Cl and 0.10 M NH_4OH :

(A) 4 **(B)** 6 **(C)** 8 **(D)** 10

93. Which of the following will suppress the ionisation of acetic acid in aqueous solution?

(A) NaCl **(B)** HCl **(C)** KCl **(D)** Unpredictable

***94.** In which of the following, dissociation of NH_4OH will be minimum?

(A) NaOH **(B)** H_2O **(C)** NH_4Cl **(D)** NaCl

95. The following equilibrium exists in aqueous solution :

$$CH_3COOH \rightleftharpoons H^+ + CH_3COO^-$$

If dilute HCl is added :

(A) The equilibrium constant will increase

(B) The equilibrium constant will decrease

(C) Acetate ion concentration will increase

(D) Acetate ion concentration will decrease