Hydrogen ion concentration- *p*H scale and Buffer solution

81. The pH of $10^{-7}NHCl$ is
(a) 6.0 (b) 6.97
(c) 8.0 (d) 10.0

82. If the pH of a solution is 2, its normality will be
(a) 2*N*
(b) $\frac{1}{2}N$
(c) 0.01 *N*
(d) None of these

83. The buffer solution of 100 ml having a pH value 4 when added to 1 ml dilute HCl, then the pH of buffer solution
(a) Converts to 7
(b) Does not change
(c) Converts to 2
(d) Changes to 10

84. In a solution of acetic acid, sodium acetate is added, then its pH value
(a) Decreases
(b) Increases
(c) Remains unchanged
(d) (a) and (b) both are correct

85. If *pOH* of a solution is 6.0, then its *pH* will be
(a) 6 (b) 10
(c) 8 (d) 14

86. In a solution of $pH = 5$, more acid is added in order to reduce the $pH = 2$. The increase in hydrogen ion concentration is
(a) 100 times (b) 1000 times
(c) 3 times (d) 5 times

87. Which solution contains maximum number of H^+ion
(a) 0.1 M HCl
(b) 0.1 M NH_4Cl
(c) 0.1 M $NaHCO_3$
(d) 0.1 M

88. A certain buffer solution contains equal concentration of 3.9×10^{-5} and HX. The K_b for H^- is 10^{-10}. The $pH$of the buffer is
(a) 4 (b) 7
(c) 10 (d) 14

89. The defination of $pH$is
(a) $pH = log\frac{1}{[H^+]}$
(b) $pH = log[H^+]$
(c) $pH = -log\frac{1}{[H^+]}$
(d) $pH = -log^{[H^+]}$

90. Which of the following does not make any change in pH when added to $10ml$ dilute HCl
(a) 5 *ml* pure water
(b) 20 *ml* pure water
(c) 10 $mlHCl$

(d) Same 20 mldilute HCl

91. A compound whose aqueous solution will have the highest pH
(a) $NaCl$ (b) Na_2CO_3
(c) NH_4Cl (d) $NaHCO_3$

92. At 80^oC, distilled water has $[H_3O^+]$ concentration equal to $1 \times 10^{-6} mole/litre$. The value of K_w at this temperature will be
(a) 1×10^{-6} (b) 1×10^{-9}
(c) 1×10^{-12} (d) K_{SP}

93. The pH value of $0.1MNaOH$ solution is (when there is a given reaction $[H^+][OH^-] = 10^{-15}$)
(a) 13 (b) 12
(c) 11 (d) 2

94. Which oxychloride has maximum pH
(a) $NaClO$ (b) $NaClO_2$
(c) $NaClO_3$ (d) $NaClO_4$

95. pH of $HCl(10^{-12}M)$ is
(a) 12 (b) -12
(c) ≈ 7 (d) 14

96. Which one is buffer solution
(a) $[PO_4^{--}][[HPO_4^{--}]$
(b) $[PO_3^{3-}][[H_2PO_4^{--}]$
(c) $[HPO_4^{--}][[H_2PO_4^{--}]$
(d) All of these

97. When $100ml$ of $M/10NaOH$ solution and $50ml$ of $M/5HCl$ solution are mixed, the pH of resulting solution would be
(a) 0 (b) 7
(c) Less than 7 (d) More than 7

98. How many millilitres of $6.0M$ hydrochloric acid should be used to prepare $150ml$ of a solution which is $0.30M$ in hydrogen ion
(a) 3.0 (b) 7.5
(c) 9.3 (d) 30

99. The *pH* of 0.1 *M* acetic acid is 3, the dissociation constant of acid will be
(a) 1.0×10^{-4} (b) 1.0×10^{-5}
(c) 1.0×10^{-3} (d) 1.0×10^{-8}

100. The pH of a buffer solution containing $25ml$ of $1MCH_3COONa$ and $25ml$ of $1MCH_3COOH$ will be appreciably affected by $5ml$ of
(a) $1MCH_3COOH$
(b) $5MCH_3COOH$
(c) $5MHCl$
(d) $1MNH_4OH$

101.