Date Planned : __ / __ / __	Daily Tutorial Sheet-10	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-2	Exact Duration :_____

116. How many litres of water must be added to 1 litre of an aqueous solution of NH_4Cl and NH_3 having pH 4.70 to create an aqueous solution having pH 5.70?

(A) 2.0 L **(B)** 9.0 L **(C)** 10 L **(D)** None of these

117. pH value of which one of the following is not equal to one ?

(A) 0.1 M HNO_3

(B) 0.05 M H_2SO_4

(C) 0.1 M CH_3COOH

(D) 50 cm^3 of 0.4 M HCl + 50 cm^3 of 0.2 M NaOH

118. 30 cc of $\frac{M}{3}$ HCl, 20 cc of $\frac{M}{2}HNO_3$ and 40 cc of $\frac{M}{4}$NaOH solutions are mixed and the volume was made upto 1 dm^3. The pH of the resulting solution is :

(A) 8 **(B)** 2

(C) 1 **(D)** 3

119. Which of the following solutions will have pH = 9 at 298 K?

(A) 1×10^{-9} M HCl solution **(B)** 1×10^{-5} M NaOH solution

(C) 1×10^{-9} M KOH solution **(D)** Both (A) and (B)

120. Which statement is false ? (Assume complete dissociation in each case)

(A) If 2.0 L of a solution of H_2SO_4 contains 0.1 mole, then pH of the solution is 1

(B) The concentration of OH^- ions in 0.005 M HNO_3 is 2.0×10^{-12} mol / L

(C) The pH of 0.01 M KOH is 12

(D) In a 0.001 M solution of NaOH the concentration of H^+ ions is 10^{-3} mol / L

121. A mixture of sodium oxide and calcium oxide are dissolved in water and saturated with excess carbon dioxide gas. The resulting solution is ..... It contains :

(A) basic; NaOH and $Ca(OH)_2$

(B) neutral; Na_2CO_3 and $CaCO_3$

(C) basic; Na_2CO_3 and $CaCO_3$

(D) acidic; NaOH and $CaCO_3$

122. Which of the following expressions is not true ?

(A) $[H^+] = [OH^-] = \sqrt{K_w}$ for a neutral solution

(B) $[H^+] > \sqrt{K_w}$ and $[OH^-] < \sqrt{K_w}$ for an acidic solution

(C) $[H^+] < \sqrt{K_w}$ and $[OH^-] > \sqrt{K_w}$ for an alkaline solution

(D) $[H^+] = [OH^-] = 10^{-7}$ M for a neutral solution at all temperatures

123. 20 mL of 0.1 M weak acid $HA(K_a = 10^{-5})$ is mixed with solution of 10 mL of 0.3 M HCl and 10 mL of 0.1 M NaOH. Find the value of $[A^-]/([HA]+[A^-])$ in the resulting solution:

(A) 2×10^{-4} **(B)** 2×10^{-5} **(C)** 2×10^{-3} **(D)** 0.05

124. A weak monobasic acid is half neutralised by a strong base. If the pH of the solution is 5.4, its pK_a is :

(A) 6.8 **(B)** 2.7 **(C)** 5.4 **(D)** 10.8

125. The pH values of 0.1 M solution of HCl, CH_3COOH, NH_4Cl and CH_3COONa will have the order :

(A) $HCl < CH_3COOH < NH_4Cl < CH_3COONa$

(B) $CH_3COONa < NH_4Cl < CH_3COOH < HCl$

(C) $NH_4Cl < CH_3COONa < CH_3COOH < HCl$

(D) All will have same of pH value