Daily Tutorial Sheet-7	Level-2

86.(A) $pH = pK_a + \log\frac{[Salt]}{[Acid]} = pK_a + 1$

87.(B) $Mg^{+2} + 2H_2O \rightleftharpoons Mg(OH)_2 + 2H^+ \qquad K_h = \frac{K^2_w}{K_b}$

88.(D) Amphiprotic species are proton donor as well as proton acceptor species.

89.(B) Statement-2 is not an explanation for Statement-1

90.(A) $K_h = \frac{K_w}{K_a} = 10^{-9} = 0.1\ h^2 \quad \Rightarrow \quad h = 0.01$

91.(A) $K_h = \frac{K_w}{K_a} = 10^{-9}$

$10^{-9} = 10^{-3}h^2 \quad \Rightarrow \quad h^2 = 10^{-6} \quad \Rightarrow \quad h = 10^{-3}$

92.(D) For basic buffer

$$pOH = pK_b + \log\frac{[NH_4^+]}{[NH_4OH]} = 5 + \log\left[\frac{0.01}{0.1}\right] = 4$$

$\Rightarrow \qquad pH = 14 - pOH = 10$

93.(B) Common ion effect by HCl will suppress the dissociation of weak electrolyte CH_3COOH

94.(AC) Common ion effect by NH_4Cl salt will suppress the dissociation of weak electrolyte, NH_4OH.

95.(D) Apply Le – Chatelier's principle