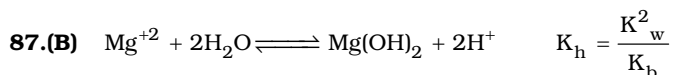


86.(A) $\text{pH} = \text{pK}_a + \log \frac{[\text{Salt}]}{[\text{Acid}]} = \text{pK}_a + 1$



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) $K_h = \frac{K_w}{K_a} = 10^{-9} = 0.1 h^2 \Rightarrow h = 0.01$

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

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

92.(D) For basic buffer

$\text{pOH} = \text{pK}_b + \log \frac{[\text{NH}_4^+]}{[\text{NH}_4\text{OH}]} = 5 + \log \left[\frac{0.01}{0.1} \right] = 4$

$\Rightarrow \text{pH} = 14 - \text{pOH} = 10$

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