

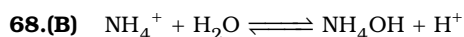
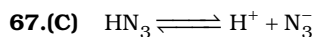
63.(B) pH scale was introduced by Sorensen

64.(B) The solution is slightly basic because concentration of KOH is too low. The concentration of OH^- is contributed not only from KOH but also from water.

65.(D) The solution is slightly acidic because concentration of HCl is too low. The concentration of H^+ is contributed not only from HCl but also from water. pH is between 6 and 7

66.(A) No. of Moles in 1L water = $\frac{1000}{18}$

$$\text{Degree of ionization} = \frac{10^{-7}}{1000/18} \times 100 = 1.8 \times 10^{-7} \%$$



Solution will be acidic

69.(A) Bicarbonate is HCO_3^- , its conjugate base is CO_3^{2-}

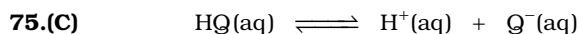
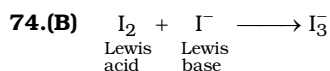
70.(D) Acid strength: $\text{HCl} > \text{CH}_3\text{COOH} > \text{NH}_4^+$

Conjugate Base strength $\text{Cl}^- < \text{CH}_3\text{COO}^- < \text{NH}_3$

71.(D) CH_3COO^- cannot donate H^+

72.(A) SnCl_4 is Lewis acid as it has empty d-orbitals

73.(D) Acid and its conjugate differs only by one H^+



$$t = t_{\text{eq}} \quad \frac{0.1 - 10^{-3}}{\approx 0.1} \quad \frac{10^{-3}}{10^{-3}}$$

$$\Rightarrow K_a = \frac{10^{-3} \times 10^{-3}}{0.1} = 10^{-5}$$