Daily Tutorial Sheet-5	Level-1

61.(D) $H_2PO_4^- \rightleftharpoons HPO_4^{2-} + H^+$

62.(C) $HO_2^- \longrightarrow H^+ + CO_2^{2-}$ conjugate base

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 $= \dfrac{1000}{18}$

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

67.(C) $HN_3 \rightleftharpoons H^+ + N_3^-$

68.(B) $NH_4^+ + H_2O \rightleftharpoons NH_4OH + H^+$

Solution will be acidic

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

70.(D) Acid strength: $HCl > CH_3COOH > NH_4^+$

Conjugate Base strength $Cl^- < CH_3COO^- < NH_3$

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^+

74.(B) $\underset{\text{Lewis acid}}{I_2} + \underset{\text{Lewis base}}{I^-} \longrightarrow I_3^-$

75.(C)

	$HQ(aq)$	$\rightleftharpoons$	$H^+(aq)$	+	$Q^-(aq)$
$t = t_{eq}$	$0.1 - 10^{-3}$		10^{-3}		10^{-3}
	≈ 0.1				

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