

Date Planned : __ / __ / __	Daily Tutorial Sheet-5	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration : _____

61. The conjugate base of H_2PO_4^- is :
 (A) H_3PO_4 (B) P_2O_5 (C) PO_4^{3-} (D) HPO_4^{2-}
62. Conjugate base of HO_2^- is :
 (A) O_2^- (B) H_2O_2 (C) O_2^{2-} (D) O_2^+
63. pH scale was introduced by :
 (A) Arrhenius (B) Sorensen (C) Lewis (D) Lowry
64. What is the pH value of $\frac{N}{10^7}$ KOH solution?
 (A) 7 (B) between 7 and 8
 (C) 8 (D) between 6 and 7
65. The pH of a 10^{-9} M solution of HCl in water is : ▶
 (A) 8 (B) -8
 (C) between 7 and 8 (D) between 6 and 7
66. One litre of water contains 10^{-7} mole of H^+ ions. Degree of ionisation of water is : ▶
 (A) $1.8 \times 10^{-7} \%$ (B) $0.8 \times 10^{-9} \%$
 (C) $3.6 \times 10^{-9} \%$ (D) $3.6 \times 10^{-7} \%$
67. Conjugate base of hydrazoic acid HN_3 is :
 (A) HN_3^- (B) H_2N_3^+ (C) N_3^- (D) N^{3-}
68. NH_4^+ ion in an aqueous solution will behave as :
 (A) A base (B) An acid
 (C) Both acid and base (D) Neutral
69. In the dissociation of bicarbonate ion, the conjugate base involved is :
 (A) CO_3^{2-} (B) CO_2 (C) H_2CO_3 (D) CO
70. The decreasing order of strength of the following bases is :
 (A) $\text{Cl}^- > \text{CH}_3\text{COO}^- > \text{NH}_3$ (B) $\text{CH}_3\text{COO}^- > \text{NH}_3 > \text{Cl}^-$
 (C) $\text{CH}_3\text{COO}^- > \text{Cl}^- > \text{NH}_3$ (D) $\text{NH}_3 > \text{CH}_3\text{COO}^- > \text{Cl}^-$
71. Which of the following does not act as a Bronsted acid ?
 (A) NH_4^+ (B) HCO_3^- (C) HSO_3^- (D) CH_3COO^-
72. The compound that is not a Lewis acid is:
 (A) AlF_3 (B) AlCl_3 (C) BCl_3 (D) SnCl_4

73. The following equilibrium is established when hydrogen chloride is dissolved in acetic acid; 

$$\text{HCl} + \text{CH}_3\text{COOH} \rightleftharpoons \text{Cl}^- + \text{CH}_3\text{COOH}_2^+$$
The set that characterises the conjugate acid-base pair is :
(A) $(\text{HCl}, \text{CH}_3\text{COOH})$ and $(\text{CH}_3\text{COOH}_2^+, \text{Cl}^-)$
(B) $(\text{HCl}, \text{CH}_3\text{COOH}_2^+)$ and $(\text{CH}_3\text{COOH}, \text{Cl}^-)$
(C) $(\text{CH}_3\text{COOH}_2^+, \text{HCl})$ and $(\text{Cl}^-, \text{CH}_3\text{COOH})$
(D) $(\text{HCl}, \text{Cl}^-)$ and $(\text{CH}_3\text{COOH}_2^+, \text{CH}_3\text{COOH})$
74. In the reaction, $\text{I}_2 + \text{I}^- \longrightarrow \text{I}_3^-$ the Lewis base is :
(A) I_2 **(B)** I^- **(C)** I_3^- **(D)** None of these
75. The pH of 0.1 molar solution of the acid HQ is 3. The value of the ionisation constant K_a of the acid is :
(A) 3×10^{-1} **(B)** 1×10^{-3} **(C)** 1×10^{-5} **(D)** 1×10^{-7}