

Acids and Bases

101. Which of the following species is an acid and also a conjugate base of another acid
 (a) HSO_4^- (b) H_2SO_4
 (c) OH^- (d) H_3O^+
102. Which of the following is Lewis acid
 (a) BF_3 (b) Cl^-
 (c) H_2O (d) NH_3
103. According to Bronsted-Lowry concept, base is a substance which is
 (a) A proton donor
 (b) An electron pair acceptor
 (c) A proton acceptor
 (d) An electron pair donor
104. Which of the following is known as hydronium ion
 (a) H^+ (b) H_2O^+
 (c) H_3O^+ (d) $H_2O_2^+$
105. An aqueous solution of aluminium sulphate would show
 (a) An acidic reaction
 (b) A neutral reaction
 (c) A basic reaction
 (d) Both acidic and basic reaction
106. The aqueous solution of aluminium chloride is acidic due to
 (a) Cation hydrolysis
 (b) Anion hydrolysis
 (c) Hydrolysis of both anion and cation
 (d) Dissociation
107. HSO_4^- is the conjugate base of
 (a) H^+ (b) H_2SO_3
 (c) SO_4^{2-} (d) H_2SO_4
108. An acid is a compound which furnishes (Bronsted-Lowry concept)
 (a) An electron
 (b) A proton
 (c) An electron and a proton
 (d) None of the above
109. The conjugate base of sulphuric acid is
 (a) Sodium hydroxide
 (b) Hydrochloric acid
 (c) Bisulphate ion
 (d) Barium hydroxide
110. Which is strongest Lewis base]
 (a) SbH_3 (b) AsH_3
 (c) PH_3 (d) NH_3
111. According to Bronsted principle, an aqueous solution of HNO_3 will contain
 (a) NO_2^- (b) NO_3^-
 (c) NO_2^+ (d) NO^+
112. Aqueous solution of an acid is characterised by the presence of



- (a) H^+ ions (b) H_2^+ ions
(c) H_3O^+ ions (d) H_4O^+ ions
113. Ammonium ion is
(a) Neither an acid nor base
(b) Both an acid and a base
(c) A conjugate acid
(d) A conjugate base
114. Aqueous solution of $AlCl_3$ is
(a) Acidic
(b) Basic
(c) Amphoteric
(d) None of these
115. The species which acts as a Lewis acid but not a Bronsted acid is
(a) NH_2^- (b) O^{2-}
(c) BF_3 (d) OH^-
116. Among the following, the weakest base is
(a) H^- (b) CH_3^-
(c) CH_3O^- (d) Cl^-
117. Which of the following is not Lewis base
(a) NH_3 (b) PH_3
(c) $(CH_3)_3N$ (d) HN_3
118. pK_a value of the strongest acid among the following is
(a) 3.0 (b) 4.5
(c) 1.0 (d) 2.0
119. The most acidic compound in water is
(a) $AlCl_3$
(b) $BeCl_2$
(c) $FeCl_3$
(d) None of these
120. BF_3 is used as a catalyst in several industrial processes due to its
(a) Strong reducing agent
(b) Weak reducing agent
(c) Strong Lewis acid nature
(d) Weak Lewis acid character

