Acids and Bases

141. When $FeCl_3$ gets soluble in water, then its solution represents which of the characteristics
(a) Amphoteric (b) Acidic
(c) Basic (d) Neutral

142. Lewis acid are those substances
(a) Which accept electron pair
(b) Which provide H^+ ion in the solution
(c) Which give electron pair
(d) Which accept OH^-ion

143. The conjugate base of HCO_3^- is
(a) H_2CO_3 (b) CO_3^{2-}
(c) CO_2 (d) H_2O

144. In the reaction $NH_3 + BF_3 \rightleftharpoons NH_3 \rightarrow BF_3, BF_3$ is
(a) Lewis acid
(b) Lewis base
(c) Neither Lewis acid nor Lewis base
(d) Lewis acid and Lewis base both

145. The strongest Lewis base in the following
(a) CH_3^- (b) F^-
(c) NH_2^- (d) OH^-

146. The aqueous solution of $CuSO_4$ is
(a) Acidic
(b) Basic
(c) Neutral
(d) Amphoteric

147. The acid having the highest pK_a value among the following is
(a) $HCOOH$
(b) CH_3COOH
(c) $ClCH_2COOH$
(d) FCH_2COOH

148. The indicator used in the titration of sodium carbonate with sulphuric acid is
(a) Phenolphthalein
(b) Methyl orange
(c) Potassium ferrocynide
(d) Potassium ferricynide

149. According to Bronsted law, water is a/an
(a) Base
(b) Acid
(c) Acid and base both
(d) Salt

150. Which of the following can give base OH^-
(a) H_2O (b) H_3O^+
(c) H_2 (d) HCl

151. Conjugate base of $HBr$is
(a) H_2Br^+ (b) H^+
(c) Br^- (d) Br^-

152. Molar heat of neutralization of $NaOH$ with HCl in comparison to that of KOH with HNO_3i]
(a) Less
(b) More
(c) Equal
(d) Depends on pressure

153. Which of the following is not a Lewis aci
(a) BF_3 (b) $AlCl_3$
(c) HCl (d) $LiAlH_4$

154. The solvent which neither accepts proton nor donates proton is called
(a) Amphoteric
(b) Neutral
(c) Aprotic
(d) Amphiprotic

155. For the reaction in aqueous solution $Zn^{2+} + X^- \rightleftarrows ZnX^+$, the K_{eq} is greatest when $X$is
(a) F^- (b) NO_3^-
(c) ClO_4^- (d) I^-

156. Why are strong acids generally used as standard solutions in acid-base titrations
(a) The pH at the equivalence point will always be 7
(b) They can be used to titrate both strong and weak bases
(c) Strong acids form more stable solutions than weak acids
(d) The salts of strong acids do not hydrolysed

157. For an aqueous solution, the characteristic species of acid is
(a) H^+ion (b) H_3O^+ion
(c) $H_2{}^+$ion (d) H_4O^+ion

158. Which is a Lewis base
(a) B_2H_6 (b) $LiAlH_4$
(c) AlH_3 (d) NH_3

159. For a weak acid, the incorrect statement is
(a) Its dissociation constant is low
(b) Its pK_a is very low
(c) It is partially dissociated
(d) Solution of its sodium salt is alkaline in water

160. Boron halides behave as Lewis acids, because of their
(a) Ionic nature
(b) Acidic nature
(c) Covalent nature
(d) Electron deficient nature