101. (d) $AlCl_3$ on hydrolysis gives weak base and strong acid among all.

102. (c) Fe^{3+}ions are hydrolysed to develop acidic nature.

103. (c) $K_h = \frac{K_w}{K_a \times K_b}$

104. (a) KCN is salt of strong base and weak acid.

105. (c) Sulphides of Group-II radicals have low solubility product.

106. (c) Because NH_3 acts as Lewis acid and they give electron pair to H_3O^+ ion.

H_3O^+ is a Lewis base. Which accept the electron pair from NH_3.

107. (c) Due to common ion effect.

108. (a) For $Ag_2SO_4 \rightarrow \underset{2x}{2Ag^+} + \underset{x}{SO_4^{--}}$

$\boldsymbol{K_{sp} = (2x)^2 . x}$; $\boldsymbol{K_{sp} = 4x^3}$; $\boldsymbol{K_{sp} = 4 \times (2.5 \times 10^{-2})^3}$

$\boldsymbol{K_{sp} = 62.5 \times 10^{-6}}$

109. (b) For $AgCl \rightarrow \underset{x}{Ag^+} + \underset{x}{Cl^-}$

$\boldsymbol{K_{sp} = x^2}$; $x = \sqrt{K_{sp}}, \sqrt{1 \times 10^{-6}} = 1 \times 10^{-3} mole/litre.$

110. (b) $AgCl \rightarrow \underset{x}{Ag^=} + \underset{x}{Cl^-}$

After $NaCl$ is added x $\quad x + 1 \times 10^{-4}$

That is why Ag^+ will be less.

111. (b) Because of ionic product of AgI >>solubility product of its.

112. (a) $AX_2 \rightarrow \underset{x}{A} + \underset{2x}{2X}$

$\boldsymbol{K_{sp} = 4x^3}$; $x = \sqrt[3]{\frac{3.2\times10^{-11}}{4}}$; $x = 2 \times 10^{-4}$*mole/litre.*

113. (c) $C_6H_5COONH_4 \rightarrow C_6H_5COO^- + NH_4^+$

$\mathbf{0.5 - \frac{.25}{100} \quad \frac{.25}{100} \quad \frac{.25}{100}}$

According to Ostwald dilution law.

$K = \frac{\alpha^2 C}{1-\alpha} \qquad \left(\therefore \quad \alpha = \frac{.25}{100}\right)$

$K = \alpha^2 C \qquad (\because \quad 1 - \alpha = \text{Very small})$

$K = \frac{.25}{100} \times \frac{.25}{100} \times .5$; $K = 3.125 \times 10^{-6}$

114. (a) $Sb_2S_3 \rightarrow \underset{2x}{2Sb^{+2}} + \underset{3x}{3S^{--}}$; $K_{sp} = (2x)^2.(3x)^3$

$\boldsymbol{K_{sp} = 108x^5}$; $K_{sp} = 108 \times (1 \times 10^{-5})^5 = 108 \times 10^{-25}$.

115. (b) When increasing the temperature the value of ionic product also increases.

116. (a) Hydrolysis constant $h = \frac{K_w}{K_a}$