



Common ion effect, Isohydric solutions, Solubility product, Ionic product of water and Salt hydrolysis

101. Which one of the following salt is most acidic in water

- (a) $NiCl_2$ (b) $BeCl_2$
(c) $FeCl_3$ (d) $AlCl_3$

102. Which of the following aqueous solution will have a pH less than 7.0

- (a) KNO_3 (b) $NaOH$
(c) $FeCl_3$ (d) 1×10^{-15}

103. Hydrolysis constant for a salt of weak acid and weak base would be]

(a) $K_h = \frac{K_w}{K_a}$

(b) $K_h = \frac{K_w}{K_b}$

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

(d) None of these

104. Which salt will give basic solution on hydrolysi]

- (a) KCN
(b) KCl
(c) NH_4Cl
(d) CH_3COONH_4

105. Which of the following sulphides has the lowest solubility product

- (a) FeS (b) MnS
(c) PbS (d) ZnS

106. The concentration of which ion is to be decreased, when NH_3 solution is add

- (a) OH^- (b) NH_4^+
(c) H_3O^+ (d) O_2^-

107. The compound insoluble in acetic acid is

- (a) Calcium oxide
(b) Calcium carbonate
(c) Calcium oxalate
(d) Calcium hydroxide

108. A saturated solution of Ag_2SO_4 is $2.5 \times 10^{-2} M$; The value of its solubility product is

- (a) 62.5×10^{-6}
(b) 6.25×10^{-4}
(c) 15.625×10^{-6}
(d) 3.125×10^{-6}

109. Solubility product of $AgCl$ is 1×10^{-6} at 298 K. Its solubility in mole $litre^{-1}$ would be

- (a) $1 \times 10^{-6} mol/litre$
(b) $1 \times 10^{-3} mol/litre$
(c) $1 \times 10^{-12} mol/litre$
(d) None of these

110. A litre of solution is saturated with $AgCl$. To this solution if 1.0×10^{-4} mole of solid $NaCl$ is added, what will be the $[Ag^+]$, assuming no volume change



- (a) More
(b) Less
(c) Equal
(d) Zero
111. The concentration of KI and KCl in certain solution containing both is $0.001M$ each. If 20 ml of this solution is added to 20 ml of a saturated solution of AgI in water? What will happen
(a) $AgCl$ will be precipitated
(b) AgI will be precipitated
(c) Both $AgCl$ and AgI will be precipitated
(d) There will be no precipitated
112. The solubility product of a sparingly soluble salt AX_2 is 3.2×10^{-11} . Its solubility (in moles / litres) is
(a) 2×10^{-4}
(b) 4×10^{-4}
(c) 5.6×10^{-6}
(d) 3.1×10^{-4}
113. 0.5 M ammonium benzoate is hydrolysed to 0.25 percent, hence its hydrolysis constant is
(a) 2.5×10^{-5}
(b) 1.5×10^{-4}
(c) 3.125×10^{-6}
(d) 6.25×10^{-4}
114. The solubility of Sb_2S_3 in water is $1.0 \times 10^{-5}\text{ mol / litre}$ at 298 K . What will be its solubility product
- (a) 108×10^{-25}
(b) 1.0×10^{-25}
(c) 144×10^{-25}
(d) 126×10^{-24}
115. The ionic product of water at $25^\circ C$ is 10^{-14} . The ionic product at $90^\circ C$ will be
(a) 1×10^{-20}
(b) 1×10^{-12}
(c) 1×10^{-14}
(d) 1×10^{-16}
116. In hydrolysis of a salt of weak acid and strong base, $A^- + H_2O \rightleftharpoons HA + OH^-$, the hydrolysis constant (K_h) is equal to.
(a) $\frac{K_w}{K_a}$
(b) $\frac{K_w}{K_b}$
(c) $\sqrt{\frac{K_a}{C}}$
(d) $\frac{K_w}{K_a \times K_b}$

