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

41. Solubility product is
(a) The ionic product of an electrolyte in its saturated solution
(b) The product of the solubilities of the ions of the electrolyte
(c) The product of solubilities of the salts
(d) The product of the concentration of the ions

42. Ionic product of water increases, if
(a) Pressure is reduced
(b) $H^+$is added
(c) $OH^-$is added
(d) Temperature increases

43. Which one is a mixed salt
(a) $NaHSO_4$ (b) $NaKSO_4$
(c) $K_4Fe(CN)_6$ (d) $Mg(OH)Cl$

44. If K_{sp} for $HgSO_4$ is 6.4×10^{-5}, then solubility of the salt is
(a) 8×10^{-3} (b) 8×10^{-6}
(c) 6.4×10^{-5} (d) 6.4×10^{-3}

45. The solubility of $BaSO_4$ in water is $2.33 \times 10^{-3} gm/litre$. Its solubility product will be (molecular weight of $BaSO_4 = 233$)
(a) 1×10^{-5} (b) 1×10^{-10}
(c) 1×10^{-15} (d) 1×10^{-20}

46. The solubility of $AgCl$ in $0.2M NaCl$ solution (K_{sp} for $AgCl = 1.20 \times 10^{-10}$) is
(a) $0.2M$
(b) $1.2 \times 10^{-10} M$
(c) $0.2 \times 10^{-10} M$
(d) $0.2 \times 10^{-10} M$

47. The solubility of AgI in NaI solution is less than that in pure water because
(a) *AgI* forms complex with *NaI*
(b) Of common ion effect
(c) Solubility product of *AgI* is less than that of *NaI*
(d) The temperature of the solution decreases

48. The solubility product of $BaSO_4$ is 1.5×10^{-9}. The precipitation in a 0.01 MBa^{2+} solution will start, on adding H_2SO_4 of concentration
(a) $10^{-9} M$ (b) $10^{-8} M$
(c) $10^{-7} M$ (d) $10^{-6} M$

49. At 20^oC, the Ag^+ion concentration in a saturated solution of Ag_2CrO_4 is$1.5 \times 10^{-4} mole/litre$. At 20^oC, the solubility product of Ag_2CrO_4 would be
(a) 3.3750×10^{-12}
(b) 1.6875×10^{-10}

(c) 1.6875×10^{-12}
(d) 1.6875×10^{-11}

50. The solubility of $PbCl_2$is
(a) $\sqrt{K_{sp}}$ (b) $3\sqrt{K_{sp}}$
(c) $3\sqrt{\frac{K_{sp}}{4}}$ (d) $\sqrt{8K_{sp}}$

51. The solubility product of 1×10^{-5} is 1.44×10^{-4} at100^oC. The solubility of silver chloride in boiling water may be
(a) $0.72 \times 10^{-4}M$
(b) $1.20 \times 10^{-2}M$
(c) 80^oC,
(d) $0.5MHCOOH$,

52. If the solubility of a sparingly soluble salt of the type BA_2 (giving three ions on dissociation of a molecule) is x moles per litre, then its solubility product is given by
(a) x^2 (b) $2x^3$
(c) $4x^2$ (d) $4x^3$

53. The solubility product of $Ag_2CrO_4$is 32×10^{-12} . What is the concentration of CrO_4^- ions in that solution
(a) $2 \times 10^{-4}m/s$
`(b)$16 \times 10^{-4}m/s$
(c) $8 \times 10^{-4}m/s$
(d) $8 \times 10^{-8}m/s$

54. The addition of HCl will not suppress the ionization of
(a) Acetic acid
(b) Benzoic acid
(c) H_2S
(d) Sulphuric acid

55. On the addition of a solution containing ${CrO_4}^{2-}$ ions to the solution of Ba^{2+}, Sr^{2+} and Ca^{2+}ions, the precipitate obtained first will be of
(a) $CaCrO_4$
(b) $SrCrO_4$
(c) $BaCrO_4$
(d) Mixture of (a), (b), (c)

56. The solubility product of a sparingly soluble salt AB at room temperature is 1.21×10^{-6}. Its molar solubility is
(a) 1.21×10^{-6}
(b) 1.21×10^{-3}
(c) 1.1×10^{-4}
(d) 1.1×10^{-4}

57. The precipitation occurs if ionic concentration is
(a) Less than solubility product
(b) More than solubility product
(c) Equal to solubility product
(d) None of these

58. If S and K_{sp} are respectively solubility and solubility product of a

sparingly soluble binary electrolyte, then

(a) $S = K_{sp}$ (b) $S = K_{sp}^2$

(c) $S = \sqrt{K_{sp}}$ (d) $S = \frac{1}{2}K_{sp}$

59. Any precipitate is formed when

(a) Solution becomes saturated

(b) The value of ionic product is less that than the value of solubility product

(c) The value of ionic product is equal than the value of solubility product

(d) The value of ionic product is greater than the value of solubility product

60. The solubility product of $AgCl$ is 4.0×10^{-10} at $298K$. The solubility of $AgCl$in $0.04mCaCl_2$ will be

(a) $2.0 \times 10^{-5}m$

(b) $1.0 \times 10^{-4}m$

(c) $5.0 \times 10^{-9}m$

(d) $2.2 \times 10^{-4}m$

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