

(D)

Date Planned : / /	Daily Tutorial Sheet-3	Expected Duration : 90 Min		
Actual Date of Attempt : / /	Level-1	Exact Duration :		

31.	The solubility of a sparingly	coluble calt AD	in water is	$1.0 \times 10^{-5} \text{ M}$	Ite colubility	product will be :
31.	The solubility of a sparingly	soluble sait AB	₂ in water is	$1.0 \times 10^{-6} M$.	its solubility	product will be :

(A) $1.0 \times 10^{-10} \,\mathrm{M}^3$ (B) $4 \times 10^{-15} \,\mathrm{M}^3$ (C) $4 \times 10^{-10} \,\mathrm{M}^3$

32. The K_{sp} for $Cr(OH)_3$ is 1.6×10^{-30} . The molar solubility of this compound in water is :

(A) $\sqrt[2]{1.6 \times 10^{-30}}$ (B) $\sqrt[4]{1.6 \times 10^{-30}}$ (C) $\sqrt[4]{\frac{1.6 \times 10^{-30}}{27}}$ (D) $\frac{1.6 \times 10^{-30}}{27}$

33. The solubility of $Ca_3(PO_4)_2$ in water is y moles/litre. Its solubility product is :

(A) $6y^4$ (B) $36y^4$ (C) $64y^5$ (D) $108y^5$

34. The molar solubility (in mol L^{-1}) of a sparingly soluble salt MX_4 is 's'. The corresponding solubility product is $K_{\rm sp}$. Then, 's' is given in terms of $K_{\rm sp}$ by the relation :

(A) $s = \left(\frac{K_{sp}}{128}\right)^{1/4}$ (B) $s = \left(128K_{sp}\right)^{1/4}$ (C) $s = \left(256K_{sp}\right)^{1/5}$ (D) $s = \left(\frac{K_{sp}}{256}\right)^{1/5}$

 $\textbf{35.} \qquad \text{The solubility product of } \operatorname{Hg}_2 \operatorname{I}_2 \ \text{ is equal to}:$

(A) $\left[\operatorname{Hg}_{2}^{2+}\right]\left[\Gamma^{-}\right]$ (B) $\left[\operatorname{Hg}^{2+}\right]\left[\Gamma^{-}\right]$ (C) $\left[\operatorname{Hg}_{2}^{2+}\right]\left[\Gamma^{-}\right]^{2}$ (D) $\left[\operatorname{Hg}^{2+}\right]\left[\Gamma^{-}\right]^{2}$

36. The solubility product of iron (III) hydroxide is 1.6×10^{-19} . If X is the solubility of iron (III) hydroxide, which one of the following expression can be used to calculate X?

(A) $K_{sp} = X^4$ (B) $K_{sp} = 9X^4$ (C) $K_{sp} = 27X^3$ (D) $K_{sp} = 27X^4$

37. If K_{SD} of Ag_2S is 10^{-17} , the solubility of Ag_2S in 0.1 M solution of Na_2S will be:

(A) 10^{-8} (B) 5×10^{-9} (C) 10^{-15} (D) 10^{-16}

38. Solubility product of $Mg(OH)_2$ at ordinary temperature is 1.96×10^{-11} . pH of a saturated solution of $Mg(OH)_2$ will be:

(A) 10.53 (B) 8.47 (C) 6.94 (D) 3.47

39. Solubility product of a salt AB is $1 \times 10^{-8} \, M^2$ in a solution in which the concentration of A^+ ions is $10^{-3} M$. The salt will precipitate when the concentration of B^- ions is kept.

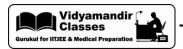
(A) Between 10^{-8} to 10^{-7} M **(B)** Between 10^{-7} to 10^{-8} M

(C) $> 10^{-5} \text{ M}$ (D) $< 10^{-8} \text{ M}$

40. In a saturated solution of the sparingly soluble strong electrolyte $AgIO_3$ (molecular mass = 283) the equilibrium which sets in is $AgIO_3(s) \rightleftharpoons Ag^+(aq) + IO_3^-(aq)$

If the solubility product constant K_{sp} of AgIO $_3$ at a given temperature is 1.0×10^{-8} , what is the mass of AgIO $_3$ contained in 100 mL of its saturated solution?

(A) $28.3 \times 10^{-2} \,\mathrm{g}$ (B) $2.83 \times 10^{-3} \,\mathrm{g}$ (C) $1.0 \times 10^{-7} \,\mathrm{g}$ (D) $1.0 \times 10^{-4} \,\mathrm{g}$



42.

44.

41.	The pK_a of a weak acid (HA) is 4.5. The pOH of an aqueous buffer solution of HA in which 50% of the
	acid ionised is :

9.5

- (A) 4.5 (B) 2.5 (C)
 - (A) CH_3COONa (B) NH_4Cl (C) NaCl (D) CH_3COONH_4
- **43.** A certain buffer solution contains equal concentration of X^- and HX. The K_b for X^- is 10^{-10} . The pH of the buffer is :
 - (A) 4 (B) 7 (C) 10 (D)

Which one of the following salts give an acidic solution in water?

- Degree of hydrolysis (h) of a salt of weak acid and a strong base is given by : $\textbf{(A)} \qquad h = \sqrt{K_h} \qquad \textbf{(B)} \qquad h = \sqrt{\frac{C}{K_h}} \qquad \textbf{(C)} \qquad h = \sqrt{\frac{K_h}{C}} \qquad \textbf{(D)} \qquad \text{None of these}$
- **45.** The hydrolysis of sodium carbonate involves the reaction between :
 - (A) Sodium ion & water (B) Na⁺ and OH⁻
 - (C) CO_3^{2-} and water (D) CO_3^{2-} and H^+

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(D)

7.0

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