

MX

(A)

Date Planned ://	Daily Tutorial Sheet-8	Expected Duration : 90 Min
Actual Date of Attempt : / /	Level-2	Exact Duration :

96.	Solubility product constant $[K_{\rm sp}]$ of salts of types MX, MX2 and M3X at temperature $^{\prime\prime}$	are"	4.0×10^{-8}
	2.0×10^{-14} and 9.7×10^{-15} respectively. Which self has maximum solubility		\bigcirc

(B)

 M_3X

- 3.2×10^{-14} and 2.7×10^{-15} respectively. Which salt has maximum solubility.
- (C) MX₂ (D) cant be predicted
- 97. An aqueous solution contains Ni^{2+} , Co^{2+} and Pb^{2+} ions at equal concentrations. The solubility product of NiS, PbS and CoS in water at 25°C are respectively given below. Indicate which of these ions will be precipitated first and last when sulphide concentration is progressively increased from zero?

$$(K_{sp} \text{ of NiS} = 3 \times 10^{-19}, K_{sp} \text{ of CoS} = 4 \times 10^{-21}, K_{sp} \text{ of PbS} = 3 \times 10^{-28})$$

- 1155 = 0×10)
- (A) NiS and PbS(B) NiS and CoS(C) CoS and NiS(D) PbS and NiS
- **98.** At 30°C the solubility of $Ag_2CO_3(K_{sp} = 8 \times 10^{-12})$ would be greatest in 1 L of :
 - (A) 0.05 M Na₂CO₃ ($R_{sp} = 0.10^{\circ}$) would be greatest in 1 L of .
 - (C) pure water (D) 0.05 M NH_3
- **99.** Some chemists at ISRO wished to prepare a saturated solution of a silver compound and they wanted it to have the highest concentration of silver ion possible. Which of the following compounds, would they use?

$$\mathrm{K_{sp}(AgCl)} = 1.8 \! \times \! 10^{-10}$$

$$K_{\rm sp}({\rm AgBr}) = 5.0 \times 10^{-13}$$

$$K_{sp}(Ag_2CrO_4) = 2.4 \times 10^{-12}$$

(A) AgCl

(B) AgBr

(C) Ag₂CrO₄

- (D) None of these
- **100.** The solubility of Pb(OH)₂ in water is 6.7×10^{-6} M. Its solubility in a buffer solution of pH = 8 would be :
 - (A) 1.2×10^{-2}

(B) 1.6×10^{-3}

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(C) 1.6×10^{-2}

- **(D)** 1.2×10^{-3}
- 101. The aqueous solution of ${\rm AlCl}_3$ is acidic due to :

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(A) Cation hydrolysis

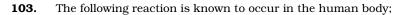
- (B) Anion hydrolysis
- (C) Hydrolysis of both the ions
- **(D)** Dissociation
- **102.** The compound whose 0.1 M solution is basic, is:
 - (A) Ammonium chloride

(B) Ammonium acetate

(C) Ammonium sulphate

(D) Sodium acetate







$$\mathrm{CO}_2 + \mathrm{H}_2\mathrm{O} \ensuremath{\Longleftrightarrow}\xspace \mathrm{H}_2\mathrm{CO}_3 \ensuremath{\rightleftharpoons}\xspace \mathrm{H}^+ + \mathrm{HCO}_3^- \,.$$

If ${\rm CO}_2$ escapes from the system :

- (A) pH will decrease
- **(B)** H⁺ ion concentration will decrease
- (C) H_2CO_3 concentration will be unaltered
- (D) The forward reaction will be promoted
- **104.** The most important buffer in the blood consist of :
 - (A) HCl and Cl⁻

(B) H_2CO_3 and HCO_3^-

(C) H_2CO_3 and Cl^-

- **(D)** HCl and HCO_3^-
- **105.** If the K_a value in the hydrolysis reaction, $B^+ + H_2O \Longrightarrow BOH + H^+$ is 1.0×10^{-6} , then the hydrolysis constant of the salt would be :
 - (A) 1.0×10^{-6}
- **(B)** 1.0×10^{-7}
- (C) 1×10^{-8}
- **(D)** 1.0×10^{-9}