Daily Tutorial Sheet-8	Level-2

96.(A) Solubility of

$MX \rightarrow \sqrt{K_{sp}} = \sqrt{4\times10^{-8}} = 2\times10^{-4}$

$MX_2 \rightarrow \left(\frac{K_{sp}}{4}\right)^{1/3} = \left(\frac{3.2\times10^{-14}}{4}\right)^{1/3} = 2\times10^{-5}$

$MX_3 \rightarrow \left(\frac{K_{sp}}{27}\right)^{1/4} = \left(\frac{2.7\times10^{-15}}{27}\right)^{1/4} = 1\times10^{-4}$

$MX > MX_3 > MX_2$

97.(D) All the salts NiS, CoS, PbS are of the type AB and one ion S^{2-} is common

$\therefore$ Lower is the K_{sp} earlier is the precipitation.

98.(D) $Ag^+(aq) + 2NH_3(aq) \rightleftharpoons [Ag(NH_3)_2]^+$

The complex formation will decrease Ag^+ ions, hence solubility increases

99.(C) Ag^+ concentration for saturated solution in water

AgCl : $\sqrt{1.8\times10^{-10}}$

AgBr : $\sqrt{5.0\times10^{-13}}$

Ag_2CrO_4 : $2\left(\frac{2.4\times10^{-12}}{4}\right)^{1/3}$ (Highest)

100.(D) $[Pb^{2+}][OH^-]^2 = 4s^3$

$[Pb^{2+}] = \frac{4\times(6.7\times10^{-6})^3}{(10^{-6})^2} = 1.2\times10^{-3}$

101.(A) $A\ell^{3+} + 3H_2O(\ell) \rightleftharpoons A\ell(OH)_3 + 3H^+$

102.(D) NH_4Cl, $(NH_4)_2SO_4 \longrightarrow$ acidic (salts of S.A. & W.B.)

$CH_3COONH_4 \longrightarrow$ Neutral (almost) (salt of CH_3COOH & NH_4OH where $K_a \approx K_b$)

103.(B) Apply Le-Chatelier's principle

104.(B) The equilibrium will a move backward direction

105.(C) $K_h = \frac{K_w}{K_a} = 10^{-8}$