



TARGET : NEET (UG) 2024

Course : SARANSH (Youtube Live CRASH COURSE)

I-CHEMISTRY

**DPP**

DAILY PRACTICE PROBLEMS

**DPP NO. 1**

## InOrganic Chemistry : Coordination Compound

### DPP No. : 1

- Homoleptic complex from the following complexes is:
  - Damminechloridonitrito – N – platinum (II)
  - Pentaamminecarbonatocobalt (III) chloride
  - Trimminetriaquachromium (III) chloride
  - Potassium trioxalatoaluminate (III)
- Which of the following forms a set of a complex and a double salt, respectively?
  - $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  and  $\text{CuCl}_2 \cdot 4\text{NH}_3$
  - $\text{PtCl}_2 \cdot 2\text{NH}_3$  and  $\text{PtCl}_4 \cdot 2\text{HCl}$
  - $\text{K}_2\text{PtCl}_2 \cdot 2\text{NH}_3$  and  $\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$
  - $\text{NiCl}_2 \cdot 6\text{H}_2\text{O}$  and  $\text{NiCl}_2(\text{H}_2\text{O})_4$
- Which complex compound is most stable?
 

(1) $[\text{Co}(\text{NH}_3)_3(\text{NO}_3)_3]$	(2) $[\text{CoCl}_2(\text{en})_2]\text{NO}_3$
(3) $[\text{Co}(\text{NH}_3)_6]_2(\text{SO}_4)_3$	(4) $[\text{Co}(\text{NH}_3)_4(\text{H}_2\text{O})\text{Br}](\text{NO}_3)_2$
- The IUPAC name of the complex -  $[\text{Ag}(\text{H}_2\text{O})_2][\text{Ag}(\text{CN})_2]$  is:
  - dicyanidosilver(I) diaquaargentate(I)
  - diaquasilver(I) dicyanidoargentate(I)
  - dicyanidosilver(II) diaquaargentate(II)
  - diaquasilver(II) dicyanidoargentate(II)
- An excess of  $\text{AgNO}_3$  is added to 100 mL of a 0.01M solution of dichlorotetraaquachromium (III) chloride. The number of moles of  $\text{AgCl}$  precipitated would be :
 

(1) 0.002	(2) 0.003	(3) 0.01	(4) 0.001
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- Cobalt (III) chloride forms several octahedral complexes with ammonia. Which of the following will not give test for chloride ions with silver nitrate at  $25^\circ\text{C}$  ?
 

(1) $\text{CoCl}_3 \cdot 4\text{NH}_3$	(2) $\text{CoCl}_3 \cdot 5\text{NH}_3$	(3) $\text{CoCl}_3 \cdot 6\text{NH}_3$	(4) $\text{CoCl}_3 \cdot 3\text{NH}_3$
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7. The correct order of the stoichiometries of AgCl formed when AgNO<sub>3</sub> in excess is treated with the complexes CoCl<sub>3</sub>.6NH<sub>3</sub>, CoCl<sub>3</sub>. 5NH<sub>3</sub>, CoCl<sub>3</sub>. 4NH<sub>3</sub> respectively is :
- (1) 1 AgCl, 3AgCl, 2AgCl (2) 3AgCl, 1 AgCl, 2AgCl  
 (3) 3AgCl, 2AgCl, 1 AgCl (4) 2 AgCl, 3 AgCl, 1 AgCl
8. Urea reacts with water to form A which will decompose to form B, B when passed through Cu<sup>2+</sup>(aq.) deep blue colour solution C is formed. What is the formula of C from the following ?
- (1) [Cu(NH<sub>3</sub>)<sub>4</sub>]<sup>2+</sup> (2) Cu(OH)<sub>2</sub> (3) CuCO<sub>3</sub>.Cu(OH)<sub>2</sub> (4) CuSO<sub>4</sub>
9. Which one of the following is an outer orbital complex and exhibits paramagnetic behaviour ?
- (1) [Ni(NH<sub>3</sub>)<sub>6</sub>]<sup>2+</sup> (2) [Zn(NH<sub>3</sub>)<sub>6</sub>]<sup>2+</sup> (3) [Cr(NH<sub>3</sub>)<sub>6</sub>]<sup>3+</sup> (4) [Co(NH<sub>3</sub>)<sub>6</sub>]<sup>3+</sup>
10. Low spin complex of d<sup>6</sup>-cation in an octahedral field will have the following energy :
- (1)  $\frac{-12}{5}\Delta_0 + P$  (2)  $\frac{-12}{5}\Delta_0 + 3P$  (3)  $\frac{-2}{5}\Delta_0 + 2P$  (4)  $\frac{-2}{5}\Delta_0 + P$
- ( $\Delta_0$  = Crystal Field Splitting Energy in an octahedral field, P = Electron pairing energy)

### Answer Key

1. (4) 2. (3) 3. (2) 4. (2) 5. (4) 6. (4) 7. (3)  
 8. (1) 9. (1) 10. (2)