



## DPP # 02

*(Choose the correct option, only one is correct)*

1. In the compound  $\text{CoCl}_3 \cdot 5\text{NH}_3$ 
  - (A) all the Cl show primary valency (PV) only
  - (B) two Cl show (PV) and one Cl secondary valency (SV)
  - (C) two Cl show (PV) and one Cl (PV) as well as (SV)
  - (D) all the Cl show (SV)
  
2. Which of the following statements is incorrect?
  - (A) Co-ordination compounds and complexes are synonymous terms.
  - (B) Complexes must give ions in the solution.
  - (C) Complexes may give ions in the solution or may not give ions in the solution.
  - (D) Generally complex ion does not dissociate into its component parts even in the solution.
  
3. Consider the following complexes:
 

(I) $\text{K}_2\text{PtCl}_6$	(II) $\text{PtCl}_4 \cdot 2\text{NH}_3$	(III) $\text{PtCl}_4 \cdot 3\text{NH}_3$	(IV) $\text{PtCl}_4 \cdot 5\text{NH}_3$
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 Their electrical conductances in an aqueous solutions are:
 

(A) 256, 0, 97, 404	(B) 404, 0, 97, 256
(C) 256, 97, 0, 404	(D) 404, 97, 256, 0
  
4. Which will not give test of all the ions present in it
  - (A)  $\text{K}_2\text{Fe}_2(\text{SO}_4)_4 \cdot 24\text{H}_2\text{O}$
  - (B)  $(\text{NH}_4)_2\text{Fe}(\text{SO}_4)_2 \cdot 6\text{H}_2\text{O}$
  - (C)  $\text{K}_3[\text{Fe}(\text{CN})_6]$
  - (D)  $\text{Fe}_2(\text{SO}_4)_3$
  
5. In the given Binary compounds such as  $\text{CrCl}_3$ ,  $\text{CoCl}_2$  and  $\text{PdCl}_2$  have primary valence of \_\_\_\_\_
  - (A) 2, 2 and 3 respectively
  - (B) 3, 2 and 2 respectively
  - (C) 3, 3 and 2 respectively
  - (D) 2, 3 and 2 respectively



## (MCQ)

6. Select the correct statement according to Werner theory :
- In coordination compounds metals show two types of linkages (valences)-primary and secondary.
  - The primary valences are normally ionisable and are satisfied by negative ions.
  - The secondary valences are non ionisable. These are satisfied by neutral molecules or negative ions. The secondary valence is equal to the coordination number and is fixed for a metal.
  - The ions/groups bound by the secondary linkages to the metal have characteristic spatial arrangements corresponding to different coordination numbers.

## (Matching List)

7. Select the correct code in the given following matching list

**List I**

(Formula and Colour)

(P)  $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$  (Yellow)(Q)  $[\text{CoCl}(\text{NH}_3)_5]\text{Cl}_2$  (Purple)(R)  $[\text{CoCl}_2(\text{NH}_3)_4]\text{Cl}$  (Green)(S)  $[\text{PtCl}_2(\text{NH}_3)_2]$  (Deep Yellow)**List II**

(Solution conductivity corresponds to)

(1) 1 : 1 electrolyte

(2) 1 : 2 electrolyte

(3) 1 : 3 electrolyte

(4) 0 : 0 electrolyte

Select correct code for your answer :

(P) (Q) (R) (S)

- |     |   |   |   |   |
|-----|---|---|---|---|
| (A) | 2 | 3 | 1 | 4 |
| (B) | 3 | 2 | 1 | 4 |
| (C) | 2 | 3 | 4 | 1 |
| (D) | 2 | 1 | 3 | 4 |



8. Select the correct code in the given following matching list

**List I**

(Formula)

**List II**(Moles of  $\text{AgCl}$  precipitated per mole of the compounds with excess  $\text{AgNO}_3$ )

(1) 0

(2) 2

(3) 2

(4) 1

Select correct code for your answer :

<b>(P)</b>	<b>(Q)</b>	<b>(R)</b>	<b>(S)</b>
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(A)	2	4	1
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(B)	4	2	3
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(C)	2	3	1
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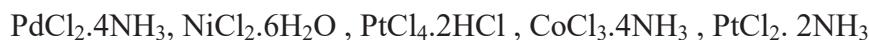
(D)	2	1	3
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**(Integer)**

9. Find the number of correct statement(s) is/are :-

- (I) Both double salts as well as complexes are formed by the combination of two or more stable compounds in stoichiometric ratio
- (II) double salts such as carnallite,  $\text{KCl} \cdot \text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ , potash alum,  $\text{KAl}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ , etc. dissociate into simple ions completely when dissolved in water
- (III) complex ions such as  $[\text{Fe}(\text{CN})_6]^{4-}$  of  $\text{K}_4\text{Fe}(\text{CN})_6$ , do not dissociate into  $\text{Fe}^{2+}$  and  $\text{CN}^-$  ions
- (IV) Mohr's salt,  $\text{FeSO}_4 \cdot (\text{NH}_4)_2\text{SO}_4 \cdot 6\text{H}_2\text{O}$  does not, dissociate into simple ions completely when dissolved in water
- (V)  $[\text{CoCl}_2(\text{NH}_3)_4]\text{Cl}$  complex dissociate into  $\text{Co}^{3+}$  and  $\text{Cl}^-$  ions

10. In the given following compounds, the total number of compounds which contains secondary valences of metals is six :





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Que.	1	2	3	4	5	6	7	8	9	10
Ans.	C	B	A	C	B	A,B,C,D	B	C	3	3