



DPP # 01

(Choose the correct option, only one is correct)

1. Find the correct option in which both ligands form same member of rings with central metal ion
 (A) OX^{2-} , Cl^- (B) en, gly⁻ (C) Py, Br⁻ (D) CO_3^{2-} , en
2. Diethylene triamine is
 (A) Chelating ligand (B) Poly dentate ligand
 (C) Tridentate ligand (D) All of these
3. Which of the following ligand can act as chelating agent but does not have chiral centre ?
 (A) nta³⁻ (B) bn (C) pn (D) None of these

More than one may be correct

4. Which of the following bidentate ligand(s) has similar donor atoms :
 (A) py (B) bn (C) en (D) gly⁻
5. Which of the following is an example of ambidentate ligand ?
 (A) $\overset{\ominus}{\text{NO}_2}$ (B) $\overset{\ominus}{\text{CN}}$ (C) $\overset{\ominus}{\text{OCN}}$ (D) H^-

Match the List with multiple options

- | | | |
|----|-------------------------|---------------------|
| 6. | List-I | List-II |
| | (P) Ethane 1, 2 diamine | (1) Chelating agent |
| | (Q) SCN ⁻ | (2) Ambidentate |
| | (R) CO_3^{2-} | (3) Flexidentate |
| | (S) NO_2^- | (4) Tridentate |

Code :

| | P | Q | R | S |
|-----|----------|----------|----------|----------|
| (A) | 1 | 2 | 3 | 4 |
| (B) | 1 | 2 | 3 | 2 |
| (C) | 4 | 1 | 3 | 2 |
| (D) | 4 | 1 | 2 | 4 |



Comprehension (Q.7 to Q.8)

Ligands can be classified by various ways, based upon charges, denticity and interaction between ligand and central atom.

Integer

9. Find the total number of 5-membered rings present in $[\text{Co}(\text{EDTA})]^-$.

10. Find the number of complex(es) which have at least one five member chelate ring formed by two carbon atoms, two nitrogen atoms and one central metal.

(I) $[\text{Co}(\text{EDTA})]^-$ (II) $[\text{Co}(\text{en})_3]^{+3}$ (III) $[\text{Co}(\text{Gly})_3]^0$ (IV) $[\text{Co}(\text{bipy})_3]^{+3}$

(V) $[\text{Co}(\text{oxalate})_3]^{-3}$ (VI) $[\text{Co}(\text{dien})(\text{NH}_3)_3]^{+3}$



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