



Class 12 Chemistry | Coordination Compounds

MCQ WORKSHEET • 15 questions • Choose one correct option • Suggested time: 25 minutes

1. Oxidation state of Co in $[\text{Co}(\text{NH}_3)_6]\text{Cl}_3$ is:

A. +3 B. +6 C. +2 D. 0

2. Coordination number of Co in $[\text{Co}(\text{en})_3]^{3+}$ is:

A. 3 B. 6 C. 2 D. 9

3. Which ligand is bidentate?

A. Cl^- B. Ethane-1,2-diamine C. NH_3 D. H_2O

4. Which ligand can show linkage isomerism?

A. NH_3 B. NO_2^- C. Cl^- D. H_2O

5. $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$ exhibits:

A. No isomerism
B. Geometrical isomerism
C. Linkage isomerism only
D. Ionisation isomerism only

6. The coordination sphere in $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{Cl}_2$ is:

A. Only five NH_3 ligands
B. Two external Cl^- ions
C. Only Co^{3+}
D. $[\text{Co}(\text{NH}_3)_5\text{Cl}]^{2+}$

7. Moles of AgCl formed from one mole $[\text{Co}(\text{NH}_3)_5\text{Cl}]\text{Cl}_2$ with excess AgNO_3 are:

A. 5 B. 2 C. 1 D. 3

8. Oxidation state of Fe in $[\text{Fe}(\text{CN})_6]^{4-}$ is:

A. +6 B. +3 C. +2 D. +4

9. Which ligand is strongest field among these?

A. I^- B. CN^- C. Cl^- D. Br^-

10. $[\text{Ni}(\text{CN})_4]^{2-}$ is usually:

A. Octahedral and paramagnetic
B. Square planar and paramagnetic
C. Square planar and diamagnetic
D. Tetrahedral and diamagnetic

11. $[\text{NiCl}_4]^{2-}$ is usually:

A. Tetrahedral and paramagnetic
B. Square planar and diamagnetic
C. Linear and diamagnetic
D. Octahedral and diamagnetic

12. In octahedral splitting, the lower-energy d set is:

A. eg B. All five equally C. t_{2g} D. Only d_{z^2}

13. A low-spin octahedral d^6 complex has how many unpaired electrons?

A. 4 B. 6 C. 2 D. 0

14. Which pair illustrates ionisation isomerism?

A. $[\text{Co}(\text{NH}_3)_5\text{Br}]\text{SO}_4$ and $[\text{Co}(\text{NH}_3)_5\text{SO}_4]\text{Br}$
B. Two mirror forms of $[\text{Co}(\text{en})_3]^{3+}$
C. N-bound/O-bound nitrito complexes
D. cis/trans $[\text{Pt}(\text{NH}_3)_2\text{Cl}_2]$

15. EDTA^{4-} commonly acts as a:

A. Monodentate ligand B. Tridentate ligand
C. Hexadentate ligand D. Bidentate ligand

ANSWER KEY — check after completing all 15 questions

1.A 2.B 3.B 4.B 5.B 6.D 7.B 8.C 9.B 10.C 11.A 12.C 13.D 14.A 15.C

Original exam-style practice • Reference notes: www.physics.guru/cbse-practice-papers/ • Not an official paper

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