



# CHEMISTRY

## BOOKS - JEEVITH PUBLICATIONS CHEMISTRY (KANNADA ENGLISH)

### CO-ORDINATION COMPOUNDS

#### Questions

1. Write the basic postulates of Werner's theory.



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2. What is a ligand ? Give example of bidentate ligand.



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3. What is Polydentate Ligand ? Give example.



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4. What are ambidentate ligands? Give an example.



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5. Give reason "Ligands are Lewis bases".



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6. The coordination number of a metal in coordination compound is –



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7. What are homoleptic and heteroleptic complexes ? Give one example for each.



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8. State the rules for writing the IUPAC names of co-ordination compounds.



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9. Write the IUPAC names of the following coordination compounds ?



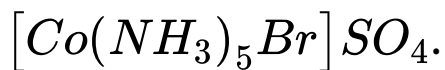
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10. Give the IUPAC name and oxidation number and co-ordination number of the following complex compounds.



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11. Write IUPAC name and ionisation isomer of



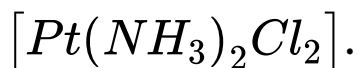
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12. What is geometrical isomerism ?



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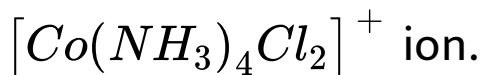
13. Draw the cis and trans isomers of





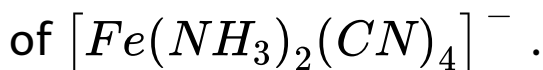
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14. Draw cis and trans isomers of



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15. Draw the structures of geometrical isomers



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16. Draw the structures of geometrical isomers of  $[CoCl_2(en)_2]^+$ .



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17. Give the facial (fac) and meridional (mer) isomeric structures of  $[Co(NH_3)_3(NO_2)_3]$ .



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18. Draw the optical isomers of  $[Co(en)_3]^{2+}$ .

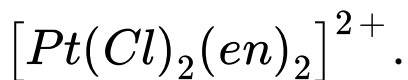






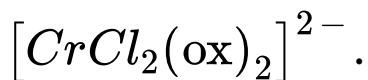
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19. Draw the optical isomers of



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20. Draw the optical isomers of



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**21.** Explain ionisation isomerisation with an example.



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**22.** What is linkage isomerism ? Explain with an example.



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**23.** What is an ambidentate ligand ? Name the type of structural isomerism arises when such

ligand present in the complex.



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**24.** Describe the structure and magnetic behaviour of  $[Ni(CN)_4]^{2-}$  ion on the basis of valence bond theory.



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**25.** Explain the hybridisation, geometry and magnetic property of  $[Ni(Cl)_4]^{2-}$ .



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26. Explain the hybridisation, geometry and magnetic property of  $[Co(NH_3)_6]^{3+}$  based on VBT.



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27. Explain the hybridisation, geometry and magnetic property of  $[CoF_6]^{3-}$  based on VBT.



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28.  $[NiCl_4]^{-2}$  and  $[Ni(CN)_4]^{-2}$  resemble in

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29.  $[Co(NH_3)_6]^{3+}$  &  $[CoF_6]^{3-}$  both are complexes of Co(III), but  $[Co(NH_3)_6]^{3+}$  is diamagnetic while  $[Co(F_6)]^{3-}$  is paramagnetic with  $\mu = 4.90BM$ . Explain.

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**30.** Which set of d-orbitals of metals ion or atom experience more repulsion in octahedral field created by the ligand.



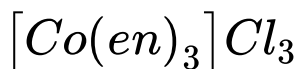
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**31.** When a linkage isomerism is possible for co-ordination compounds ?



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**32.** Indicate the types of isomerism exhibited by the follow complexes and draw the structures for these isomers :



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**33.** According to crystal filed theory , five d-orbitals of an octahedral complex split to give



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