

Model Question Paper
Coordination Compounds and Bio-Coordination Compounds - Part I

12th Standard

Chemistry

Reg.No. :

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I. Answer all the questions.

II. Use Blue pen only.

Time : 00:45:00 Hrs

Total Marks : 45

5 x 1 = 5

Section-A

- 1) Which a double salt
(a) $K_2SO_4 \cdot Al_2(SO_4)_3 \cdot 24H_2O$ (b) $NaCl$ (c) $K_4[Fe(CN)_6]$ (d) KCl
- 2) An example of a complex compound having coordination number 4.
(a) $K_4[Fe(CN)_6]$ (b) $[Co(en)_3]Cl_3$ (c) $[Fe(H_2O)_6]Cl_3$ (d) $[Cu(NH_3)_4]Cl_2$
- 3) The geometry of $[Cu(NH_3)_4]^{2+}$ complex ion
(a) Linear (b) Tetrahedral (c) Square planar (d) Angular
- 4) An example of a chelating ligand is
(a) NO_2^- (b) Chloro (c) Bromo (d) en
- 5) The geometry of complex ion $[Fe(CN)_6]^{4-}$ is
(a) tetrahedral (b) square planar (c) Octahedral (d) triangular

Section-B

5 x 3 = 15

- 6) What are simple salts? Give one example.
- 7) What are double salts? Give one example.
- 8) In what way complex salt differs from double salt?
- 9) What are ligands and coordination number?
- 10) Give one example for a monodentate ligand, a bidentate ligand and a chelating ligand.

Section-C

5 x 5 = 25

- 11) Explain coordination and ionisation isomerism with suitable examples.
- 12) Explain Werner's theory of co-ordination compounds?
- 13) What are the postulates of valence bond theory?
- 14) Using VB theory explain why $[Ni(CN)_4]^{2-}$ is diamagnetic whereas $[Ni(NH_3)_4]^{2+}$ is paramagnetic.
- 15) Mention the type of hybridisation, magnetic property and geometry of the following complexes using VB theory. (i) $[FeF_6]^{4-}$ (ii) $[Fe(CN)_6]^{4-}$
