(7) optical isomers:

Dextro and Levo rotatory complexes are respectively designated either by (+) or (−) or by 'd' or 'l'.

e.g; d−$K_3[Ir(C_2O_4)_3]$

potassium d-trioxalato iridiate (III).

(8) Writing the formula of complexes:

When writing the formula of complexes, the complex ion should be enclosed by square bracket.

The metal is written first, then the co-ordinated groups are listed in the order;

Negative ligands, neutral ligands and positive ligands (Alphabatically according to the first symbol within each group).

* Write the names of the following complex compound according to IUPAC nomenclature:

(1) $[Co(NH_3)_2(H_2O)_2(CN)_2]Cl$ Diamine diaqua dicyano cobalt(III) chlo

(2) $[Fe(NH_3)_6][Fe(CN)_6]$ Hexamine iron (III) hexa cyano Ferrate (

(3) $[Cr(NH_3)_5(NCS)][ZnCl_4]$ pentamine isothiocyanato chromium (III) tetrachloro zincate (II)

(4) $[Fe(C_5H_5)_2]$ Ferrocene Bis(cyclopentadiene) iron (II)

(5) $Mn_3(CO)_{12}$ Dodeca carbonyl tri-manganese (0).

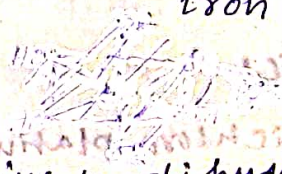
(6) $[Pt(NH_3)_3(Br)(NO_2)(Cl)]Cl$ Tri-amine bromo chloro nitro platinum (IV) chloride.

(7) $LiAlH_4$ Lithium tetra hydro aluminate (III)

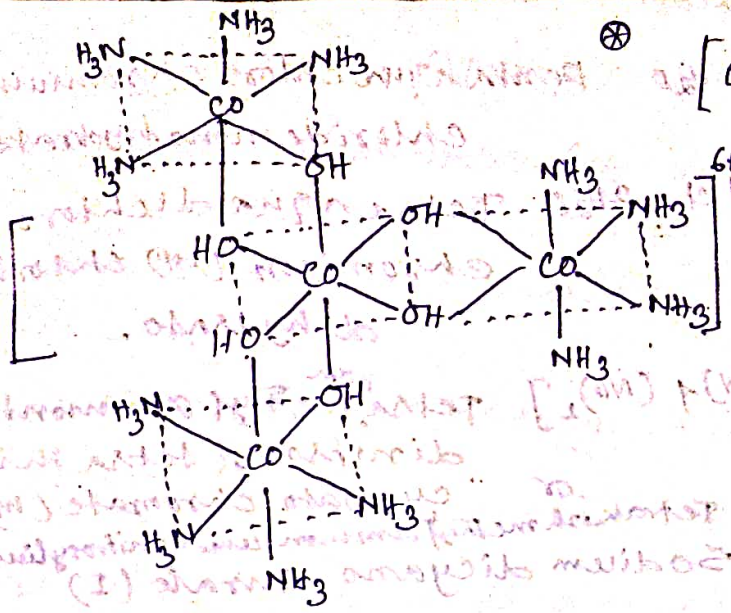
(8) $K_2[OsCl_5N]$ potassium pentachloro nitrido osmate (VI)

(9) $Na_3[Ag(S_2O_3)_2]$ sodium di-thio sulphato Argentate (I).

(10) $Fe_2(CO)_9$  M-tricarbonyl bis[tricarbon iron (0)]

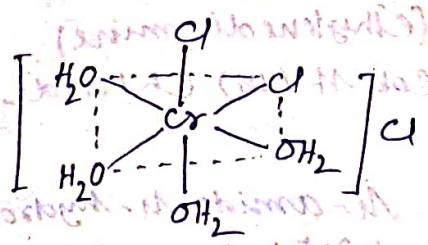
(11) $\left[Co\left(\begin{matrix}OH\\OH\end{matrix}\right)Co(NH_3)_4\right)_3\Big]^{6+}$ 

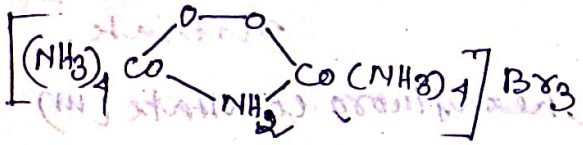
tris[tetramine M-dihydroxo cobalt (III)] cobalt (III) ion.



⊛ $\left[Co\left\{\begin{matrix}OH\\OH\end{matrix}Co(NH_3)_4\right\}_3\right]^{6+}$

6+ ye is the example of pure inorganic optically active compound.

(12)  cis-tetra aqua dichloro chromium (III) chloride.

(13)  μ-amido μ-peroxo bis[tetraamine cobalt (III)] bromide

(14) $Ca_4[Fe(CN)_6]$ Calcium hexacyano ferrate (II)

(15) $[Fe(H_2O)_6]SO_4$ Hexa aqua iron (II) sulphate

(16) $[Co(NH_3)_5Cl]Cl_2$ Pentamine chloro Cobalt (III) chloride

(17) $[PtCl_2(NH_3)_2]$ Diamine dichloro platinum (II)

(18) $\left[(C_2O_4)_2Cr\left\langle\begin{matrix}OH\\OH\end{matrix}\right\rangle Cr(C_2O_4)_2\right]^{4-}$ Dioxalato chromate (III) - μ - dihydroxo - dioxalato chromate (III) ion

or

μ-dihydroxo bis[dioxalato chromate (III)] ion

(19) $[Pt(Py)_4][PtCl_4] \rightleftharpoons [Pt(Py)_4]^{2+} + [PtCl_4]^{2-}$

Tetra Pyridine platinum (II) tetrachloro platinate (II)

(20) $[Ir(en)_2Cl_2]^{\oplus}$ Dichloro bis (ethylene di-amine) Iridium (III) ion

(21) $[Ni(NH_3)_2(en)](CH_3COO)_2$ Diamine ethylene diamine Nickel (II) Acetate.

(22) $[Pd(I)_2(ONO)_2(H_2O)_2]^{2-}$ Diaqua diiodo dinitrido Paladium (II) ion

(23) $[Co(en)_3]_2(SO_4)_3$ Bis[Tris (ethylene di-amine) cobalt (III)] sulphate.

(24) $[Cr(H_2O)_5Cl]Cl_2 \cdot H_2O$ Penta aqua chloro chromium (III) chloride mono hydrate.

(25) $[Cr(H_2O)_4Cl_2]Cl \cdot 2H_2O$ Tetra aqua dichloro chromium (III) chloride dihydrate.

(26) $(CH_3)_4N[Cr(SCN)_4(NO)_2]$ Tetramethyl ammonium dinitrosyl tetra thio cyanato chromate (III)
or
Tetrakis methyl ammonium dinitrosyl tetra thio cyano chromate (I)

(27) $Na[Au(CN)_2]$ Sodium dicyano Aurate (I)

(28) $[Co(en)_2(ONO)Cl]Cl$ Chloro bis (ethylene diamine) nitrito cobalt (III) chloride

(29) $\left[(NH_3)_4Co\begin{matrix}NH_2\\OH\end{matrix}Co(NH_3)_4\right](NO_3)_4$ μ-amido μ-hydroxo bis [tetramine Cobalt (III)] nitrate.

(30) $[Cr(NH_3)_6][CoF_6]$
Hexamine chromium (III) hexafluoro cobaltate (III)

(31) $[Co(NH_2)_2(NH_3)_4]OC_2H_5$
Diamido tetramine cobalt (III) ethoxide

(32) $\left[(NH_3)_5Cr-OH-Cr(NH_3)_5\right]Cl_5$
μ-hydroxo bis [Pentamine chromium (III)] chloride.

(33) $[Cr(en)_3][Ni(CN)_5]$ Tris ethylene diamine chromium (III) penta cyano Nickalate (II)

(34) $[Co(N_3)(NH_3)_5]SO_4$ Pentamine azido cobalt (III) sulphate

(35) Sodium nitroprusside. $Na_2[Fe(CN)_5(NO)]$
Sodium penta cyano nitrosylium Ferrate (II)
or
Sodium penta cyano nitrosyl Ferrate (III)

(36) $Na_4[Fe(CN)_5(NO)(S)]$ Sodium pentacyano nitrosylium sulphido ferrate (II)
Sodium pentacyano nitrosyl sulphido Ferrate (III).

(37) $Ni\left(\begin{matrix}O-C=S\\O-C=S\end{matrix}\right)_2$ Bis [dithio-oxalato -O-O'] Nickel (IV)

(38) $Pt\left(\begin{matrix}S-C=O\\S-C=O\end{matrix}\right)_2$ Bis [dithio oxalato-S-S] Platinum (IV).