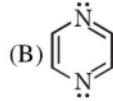
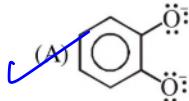


ONE OR MORE THEN ONE CORRECT TYPE

1. $(\text{NH}_4)_2[\text{Ce}(\text{NO}_3)_6]$ have common name ceric ammonium nitrate, required in some organic reactions.
What is O.N. , C.N. of metal
(A) +4 , 6 (B) +4 , 12 (C) +3 , 6 (D) +3 , 10
2. What is correct about ceric ammonium nitrate :
(A) It is chelating complex (B) Ligands bonded by O-atom(s)
(C) Ligands bonded by O and N atoms (D) Counter ion is ammonium ion
3. Which ligand have 3° amine group.
(A) dien (B) en (C) trien (D) tren (triaminotriethylamine)
4. Dithioxalate ion is $\begin{array}{c} \text{COS}^- \\ | \\ \text{COS}^- \end{array}$
Select correct about it.
(A) Bidentate ligand (B) Chelating ligand
(C) Carbon is donor atom (D) Ambidentate ligand
5. Select which is/are chelating ligand.

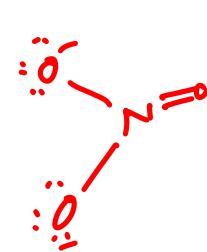
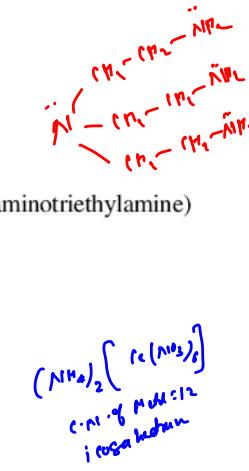
MATRIX MATCH TYPE

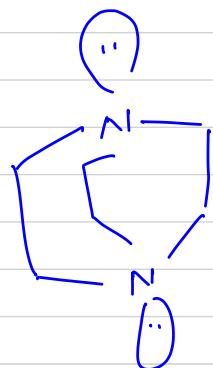
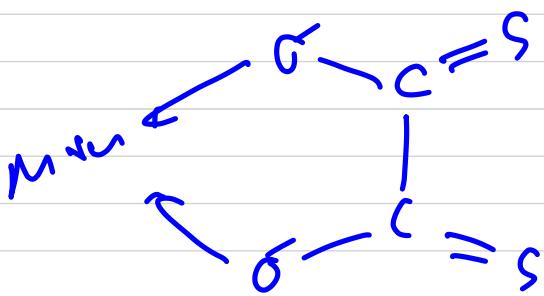
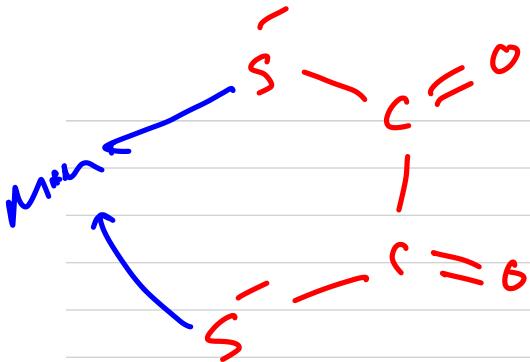
6. Column-I
(A) nta³⁻ QLS
(B) pn QST
(C) Gly⁻¹ QRS
(D) Amide NH_2^- P, S

- Column-II
(P) Monodentate ligand
(Q) Polydented ligand
(R) O-donor atom
(S) N-donor atom
(T) Have chiral center

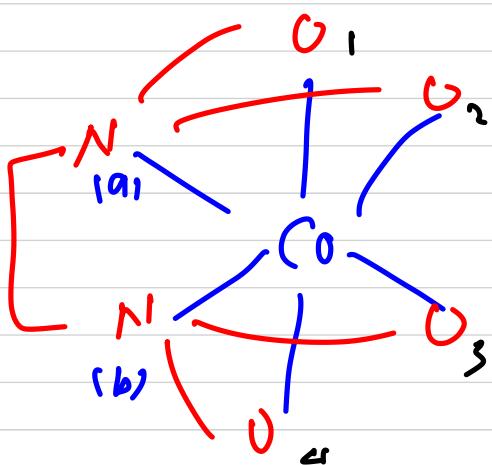
INTEGER TYPE

7. Consider $[\text{Co}(\text{EDTA})]^{3-}$ octahedral complex and find.
(i) Co-N linkages 2
(iii) Number of N-Co-O bond angles 8
(v) Number of N-Co-N bond angles 1
- (ii) Co-O linkages 4
(iv) Number of O-Co-O bond angles 6
(vi) Number of cis N-Co-O bond angles 6
8. Find number of chelate rings in $[\text{Co}(\text{tri(en)}\text{Cl}_2)]^+$ 3
9. Find sum of the "N" donor site in
Gly⁻¹ , bipy , en , oxine , EDTA⁴⁻ 8
10. Consider prussian blue
 $\text{Fe}_4[\text{Fe}(\text{CN})_6]_3$ $\xrightarrow{\text{4 Fe}^{+3}}$ $3 (\text{Fe}(\text{CN})_6)^{4-}$
Find O.N. of central metal = +2
Find average O.N. of metal (Fe) = + $\frac{18}{7}$
Number of complex ions in 1 mole. = 7
- Find O.N. of counter ion = +3
Number of counter ions in 1 mole. 4





$1-2$
 $2-3$
 $2-4$
 $1-3$
 $1-4$
 $3-4$



$Na_1 - C_0 - O_1$
 $Na_1 - C_0 - O_2$
 $Na_1 - C_0 - O_3$
 $Na_1 - C_0 - O_4$

$Na_2 - C_0 - O_1$

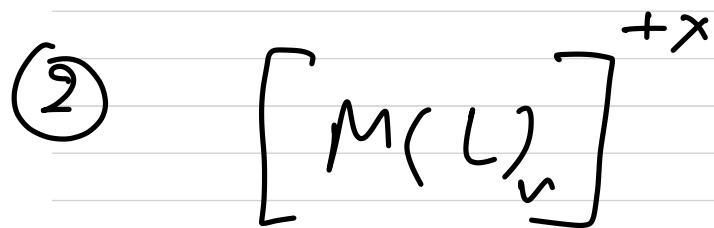
$Na - C_0 - O_1$

$Na - C_0 - O_2$

$Na - C_0 - O_4$

[TUPAC Naming]

① Name of one cation + Name of one anion



No. of ligand + Name of ligand + Name of Metal
+ (O.N.)

③ Naming of ligand.

i) anionic :-

ide = ido

ate = ato

ite = ito

(ii) Cationic = No charge

(iii) Neutral =

PPh₃ = triphenylphosphine

Py = Pyridine

en = Ethylenediamine
(ethane 1,2 diamine)

Ammonia

H₂O = Aqua

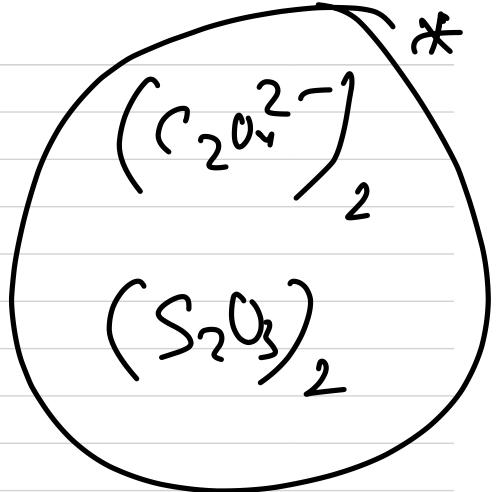
CO = Carbonyl

CS = Thiocarbonyl

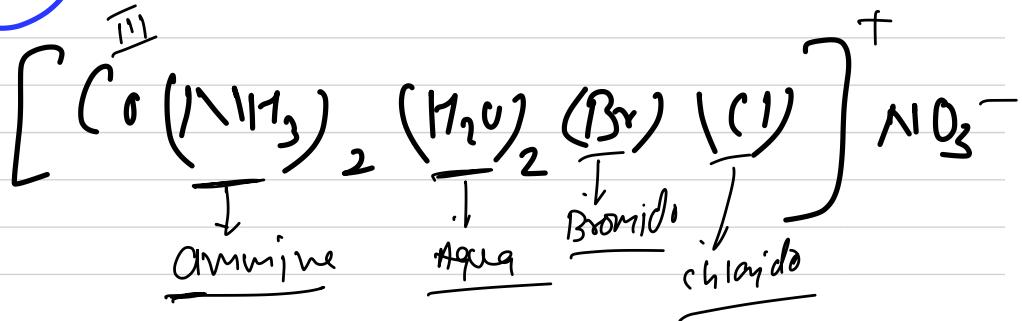
NO = Nitro group

(4)

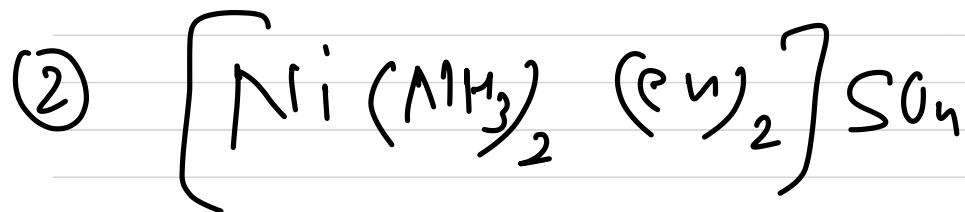
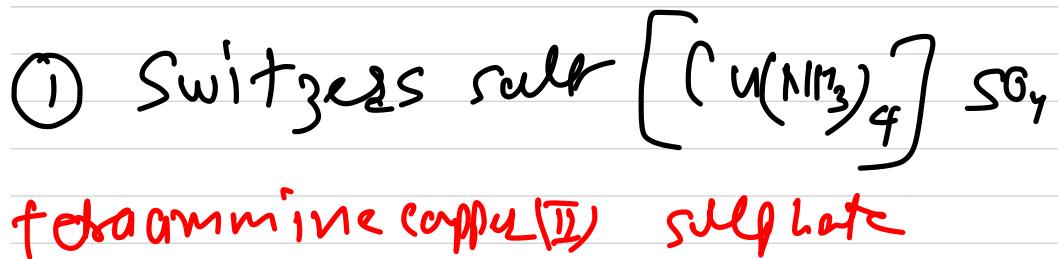
bis
tris
tetrakis
penta kis



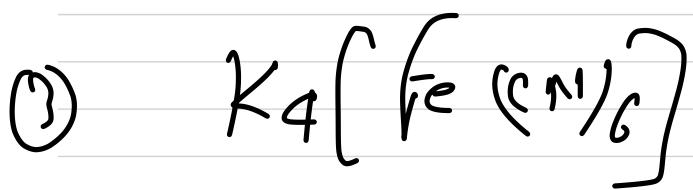
(5)



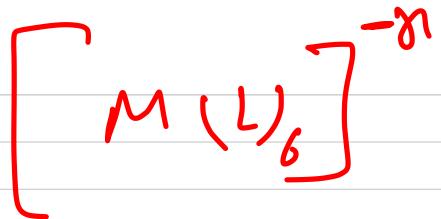
diamminedi aquabromido chloridocobalt(II) nitrate



diamminebis(en)nickel(II) sulphate



Potassium hexacyanido ferate(II)



iran: forrente Mg: Magnisate

Co: Cobalteate Mn: Mangnate

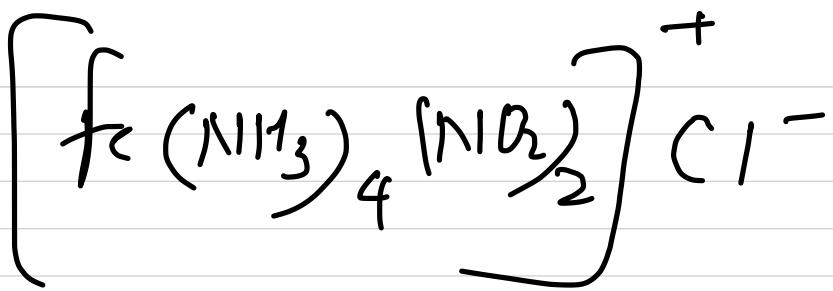
Ag: Argentate

Au: Aureate

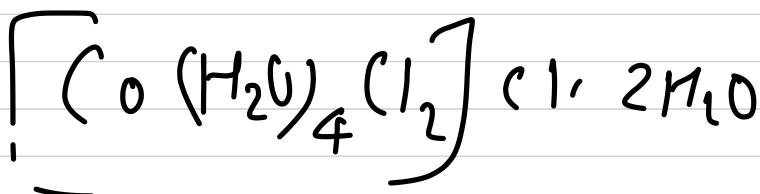
Pt: Platinate

Cu: Cuprate

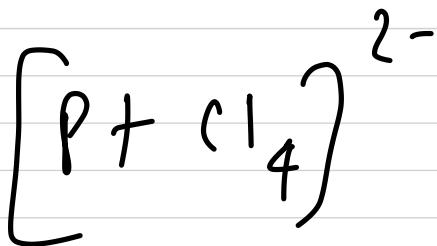
Zn: Zinrate



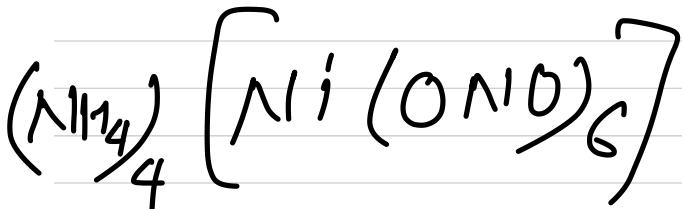
ferrociammine dinitro-nitron(II) chloride



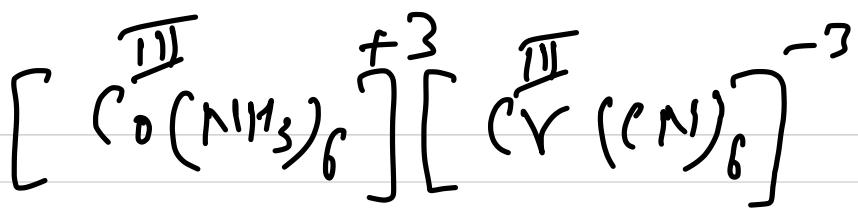
ferrocyanocinchlorido cobalt(II) chloride
· dihydrate



tetrachloroplatinate(2) ion



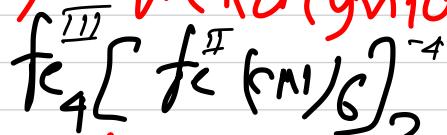
ammonium hexamitro - O nickelate
(II)



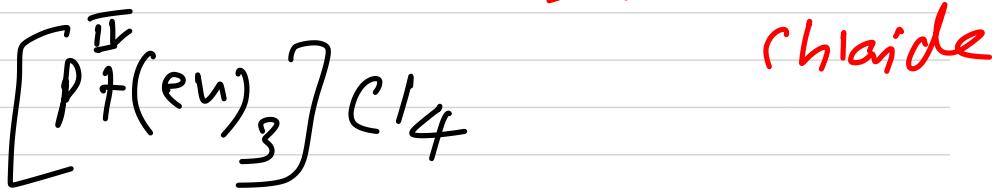
hexaaquacobalt(II) hexacyanidochromate(II)

Q Write formula of -

(1) iron (II) hexacyanidoferate(II)

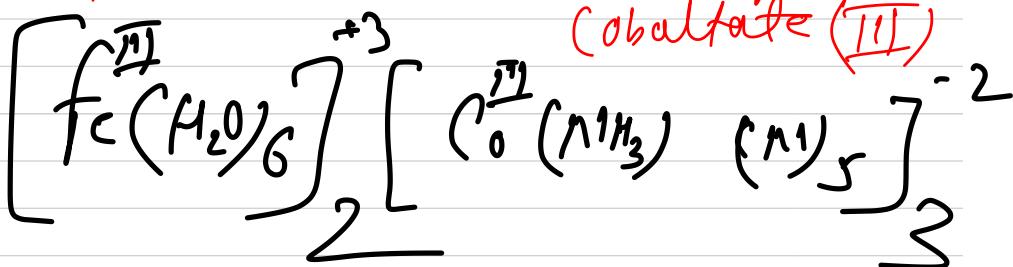


(2) tris(ethylenediamine)platinum(IV)



(3)

hexaaqua'iron(II) ammine pentacyano cobaltate(III)



(omm 071)

C₀ = +2, +3

Ni = +2

Cu = +1, +2

f_c = +2, +3

Ag, Au = +1, +3

Pt
Pd = +2 +4

Mn = +L, +4, +6, +7

Cr = +3, +6

Tm = +2

1. $K_2[HgI_4]$
2. $LiAlH_4$
3. $K_3[Fe(CN)_6]$
4. $K_2[PtCl_6]$
5. $[PtCl_2(NH_3)_2]$
6. $[Co(NH_3)_6]Cl_3$
7. $[Fe(en)_3]Cl_3$
8. $K_3[Ir(C_2O_4)_3]$
9. $[Co(NCS)(NH_3)_5]Cl_2$
10. $[CoBr(ONO)(en)_2]^{+1}$
11. $[(CO)_3Fe(CO)_3Fe(CO)_3]$
12. $[CoI(NH_3)_5]SO_4$
13. $[Co(NH_3)_6][Co(ONO)_6]$
14. $(NH_4)_2[Pt(SCN)_6]$
15. $[(NH_3)_5CrOHCr(NH_3)_4(H_2O)]^{5+}$
16. $(NH_4)_3[Cr(NCS)_6]$
17. $[Pt(NH_3)_4][PtCl_4]$
18. $(NH_4)_4[Mo(CN)_8]$
19. $[FeF_6]^{3-}$
20. $[CoCO_3(NH_3)_5]Cl$

(1) 1.1. W'
(2) O⁻² chemi nul
b e y