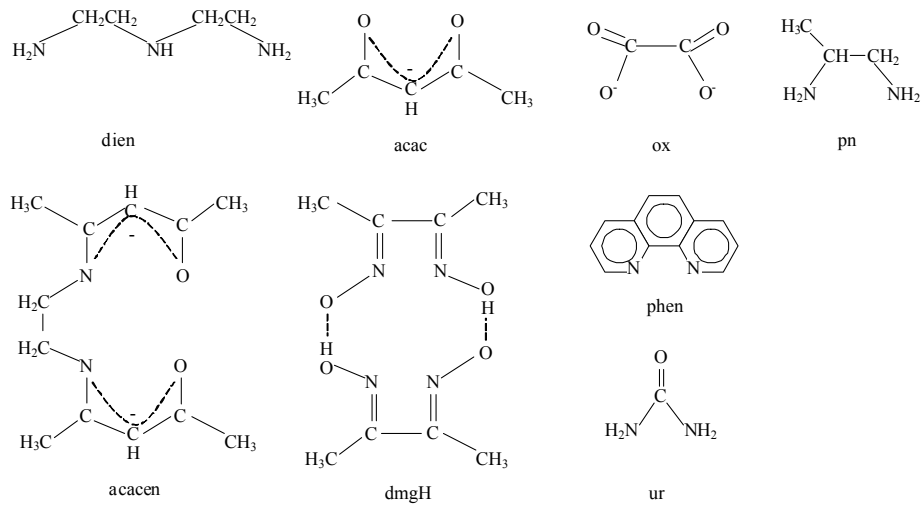


無機化学 演習問題 No.2 解答例

1. 単塩・・・NaCl, K₂SO₄
 複塩・・・KAl(SO₄)₂·12H₂O, (NH₄)₂Fe(SO₄)₂·6H₂O
 錯塩・・・[Co(NH₃)₆]Cl₃, K₄[Fe(CN)₆]
2. [Cr(NH₃)₆]³⁺ 3+ 6 配位 単座 [Co(edta)]⁻, 3+ 6 配位 6 座
 [Co(en)₃]³⁺ 3+ 6 配位 2 座 [Ni(CN)₄]²⁻, 2+ 4 配位 単座
 [Ag(S₂O₃)₂]³⁻ 1+ 2 配位 単座

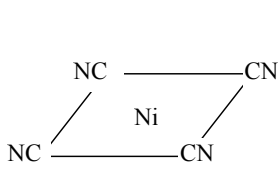
4. dien : diethylenetriamine
 acac : acetylacetonato
 acacen : N, N'-bis(1-methyl-3-oxobutylidene)ethylenediaminato
 dmgH : bis(dimethylglyoximato)
 ox : oxalato
 phen : 1, 10-phenanthroline
 pn : propylenediamine
 ur : urea



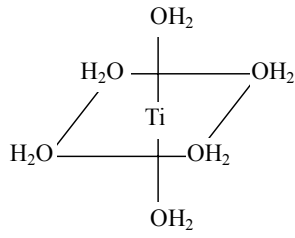
4. 省略(各自考えること)

5. (1)[Co(NH₃)₄(en)]Cl₃ tetraammineethylenediaminecobalt() chloride
 (2)[CrCl₄(en)]⁻ tetrachloroethylenediaminechromate() ion
 (3)[PtCl(acac)(NH₃)] acetylacetonatoamminechloroplatinum()
 (4)[Ru(NH₃)₅N₂](NO₃)₂ pentaamminediazoruthenium() nitrate
 (5)KFeCl₄ potassium iron chloride
 (6)[Co(NH₃)₆]Cl₃ hexaamminecobalt() chloride
 (7)[Cr(en)₃]Br₃·H₂O tris(ethylenediamine)chromium() bromide monohydrate
 (8)[CoCl(NH₃)₅]SO₄ pentaamminechlorocobalt() sulfate
 (9)[CoCl₃(NH₃)₃] triamminetriclorocobalt()
 (10)[Cu(acac)₂] bis(acetylacetonato)copper()
 (11)[Ni(CO)₄] tetracarbonylnickel(0)
 (12)K₄[Fe(CN)₆] potassium hexacyanoferrate()
 (13)Na₃[Co(CO₃)₃]·3H₂O sodium tricarbonatocobaltate() trihydrate
 (14)Na₃[Ag(S₂O₃)₂] sodium bis(thiosulfato)argentate()
 (15)Na[Co(edta)]·H₂O sodium ethylenediaminetetraacetatocobaltate() monohydrate
 (16)[Pt(py)₄][PtCl₄] tetrakis(pyridine)platinum() tetrachloroplatinate()
 (17)[(NH₃)₅Cr(OH)Cr(NH₃)₅]Cl₃ μ-hydroxo-bis[pentaamminechromium()] chloride
 (18)[Cr(C₆H₆)₂] bis(η⁶-benzen)chromium(0)

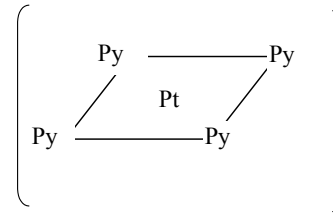
6.



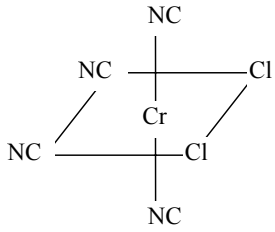
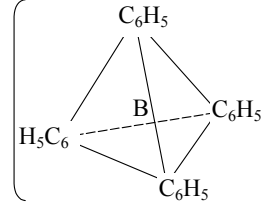
$\text{Na}_2[\text{Ni}(\text{CN})_4]$



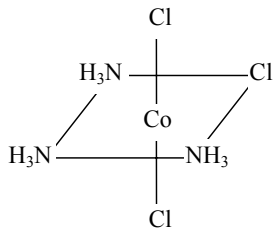
$[\text{Ti}(\text{H}_2\text{O})_6]\text{Cl}_3$



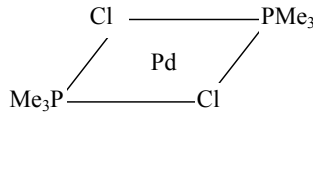
$[\text{Pt}(\text{py})_4][\text{B}(\text{C}_6\text{H}_5)_4]$



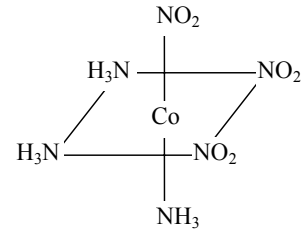
$\text{cis}-[\text{CrCl}_2(\text{CN})_4]^{3-}$



$\text{mer}-[\text{CoCl}_3(\text{NH}_3)_3]$



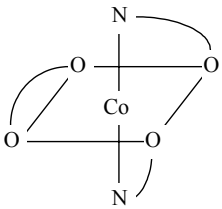
$\text{trans}-[\text{PdCl}_2(\text{PMe}_3)_2]$



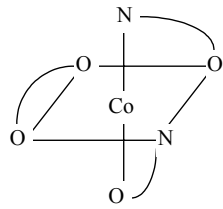
$\text{fac}-[\text{Co}(\text{NO}_2)_3(\text{NH}_3)_3]$

7.

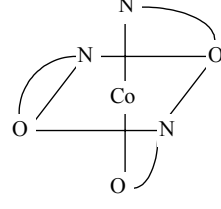
$[\text{Co}(\text{CO}_3)(\text{gly})_2]^-$



trans

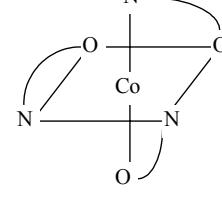


cis



mer

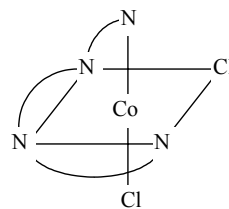
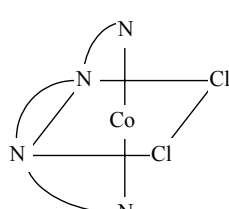
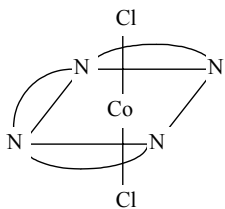
$[\text{Co}(\text{gly})_3]$



fac

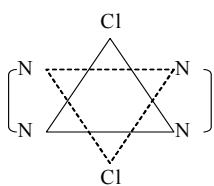
8.

$[\text{CoCl}_2(\text{trien})]^+$



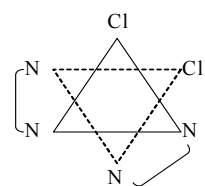
9.

(i)

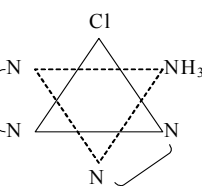
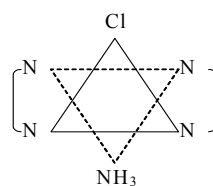


trans

(ii)

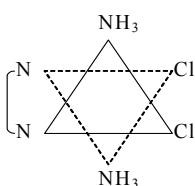
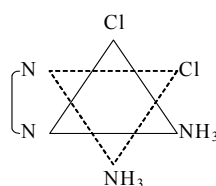
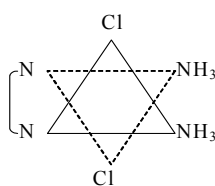


cis
光学異性体有り



光学異性体有り

(iii)



光学異性体有り

注意

光学異性体は錯体中に鏡面や回映軸などを含まないもの