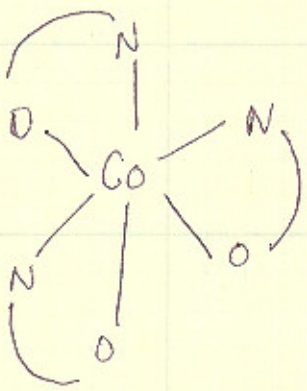
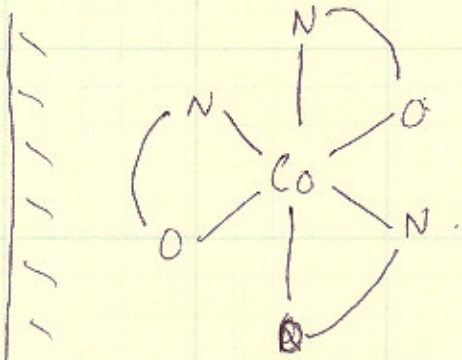
ATOMS, MOLECULES & RESEARCH

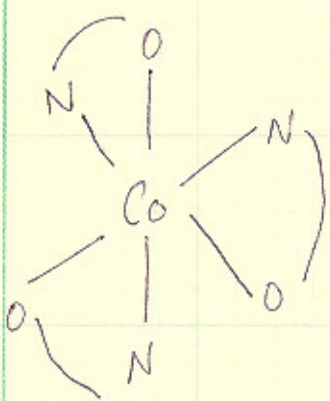
COORDINATION CHEMISTRY - SPRING - WEEK 2

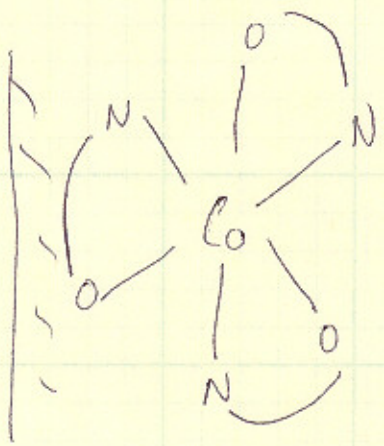
Chapter (9)

(6) glycinato ligand = $H_2\ddot{N}-\overset{\overset{\ddot{O}}{\|}}{CH_2}-\overset{\overset{O}{\|}}{C}-O^-$ ≡ 









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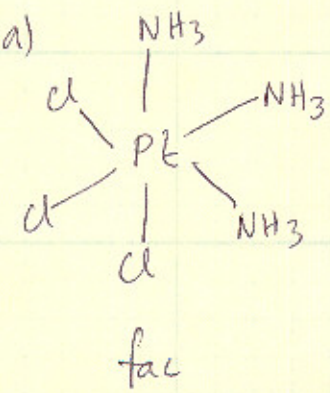

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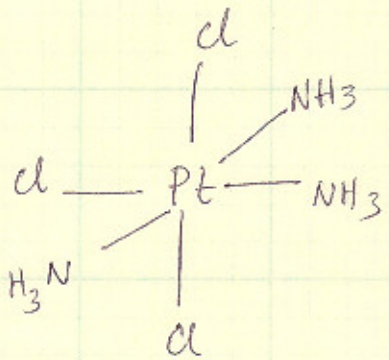

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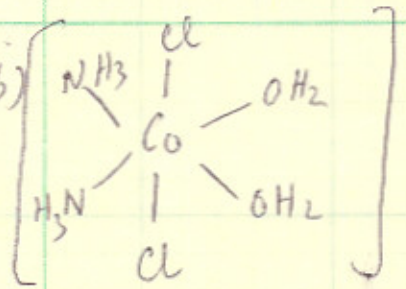
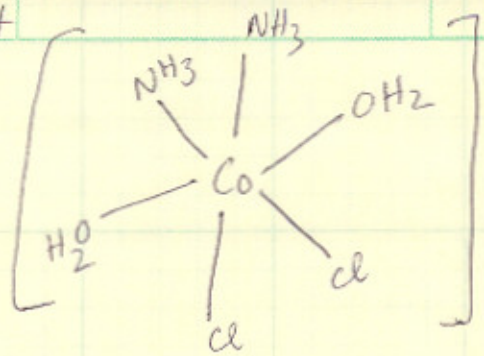
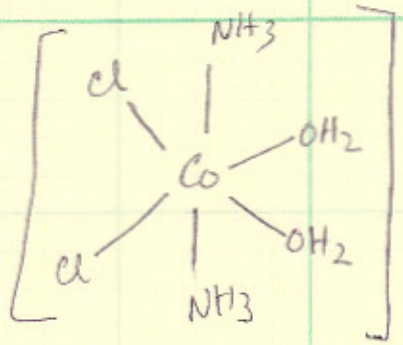
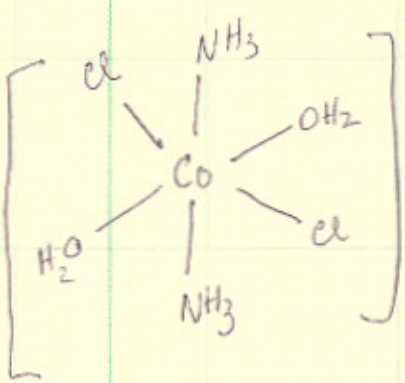
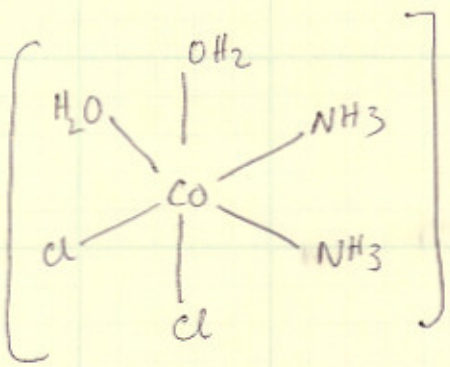
(b)

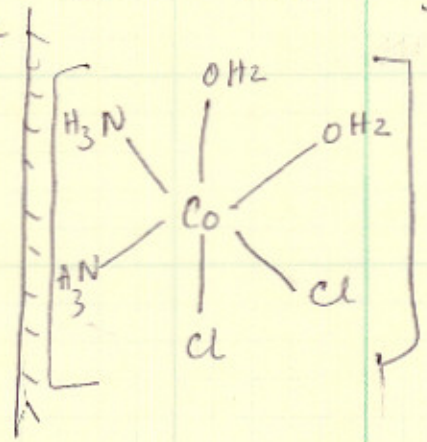












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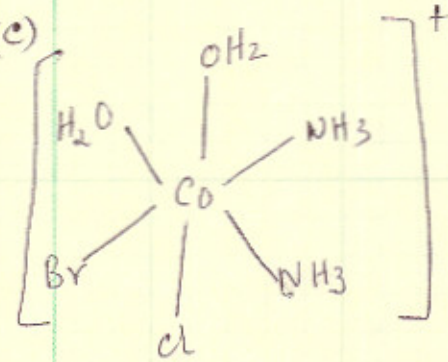

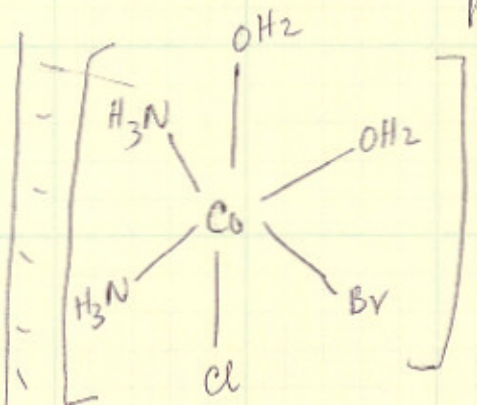

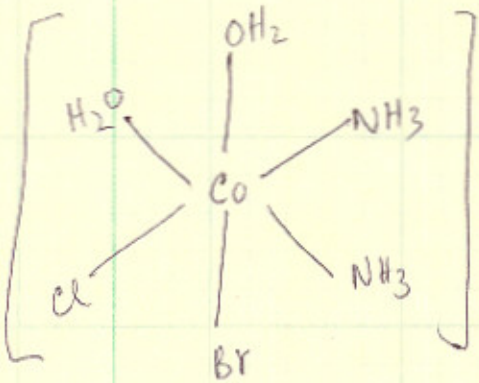

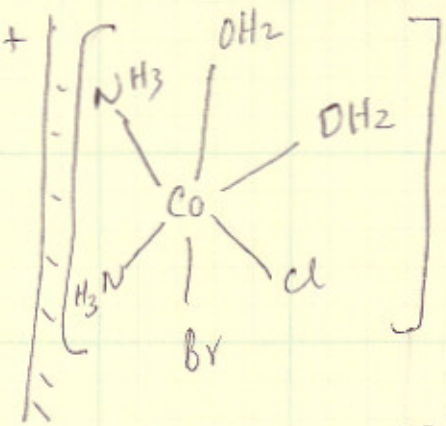

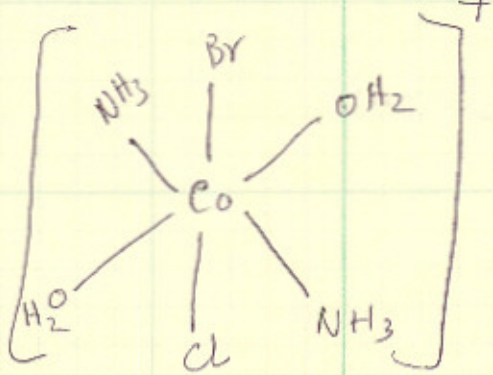

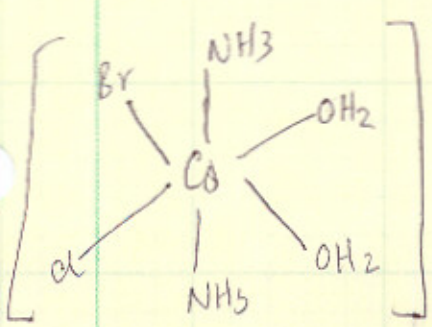

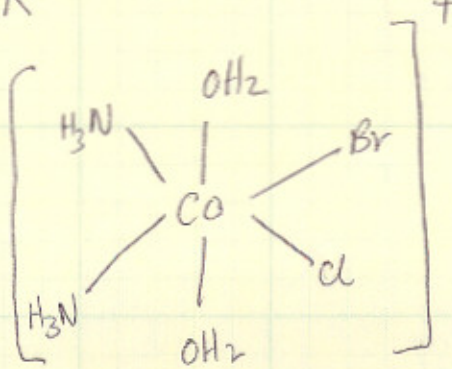

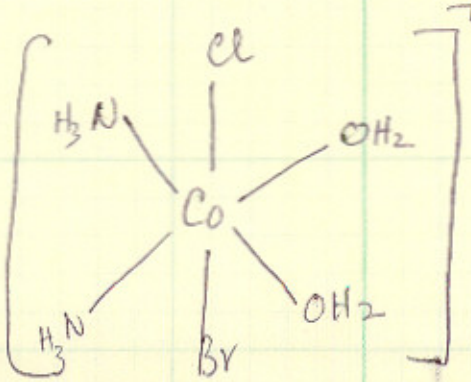

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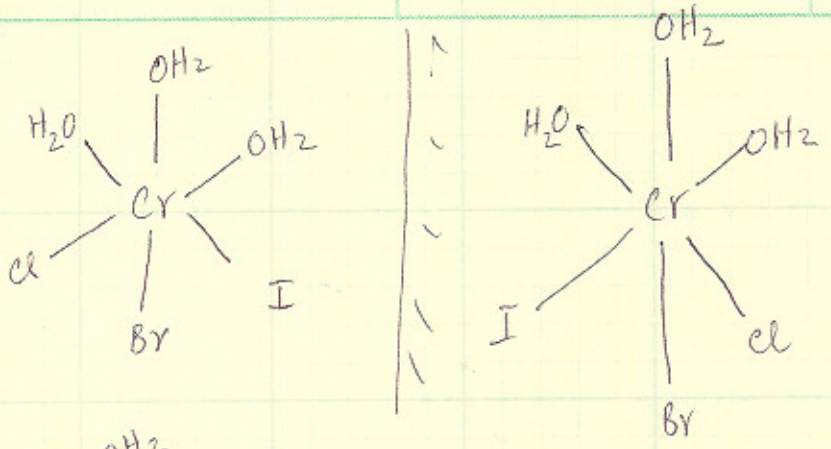

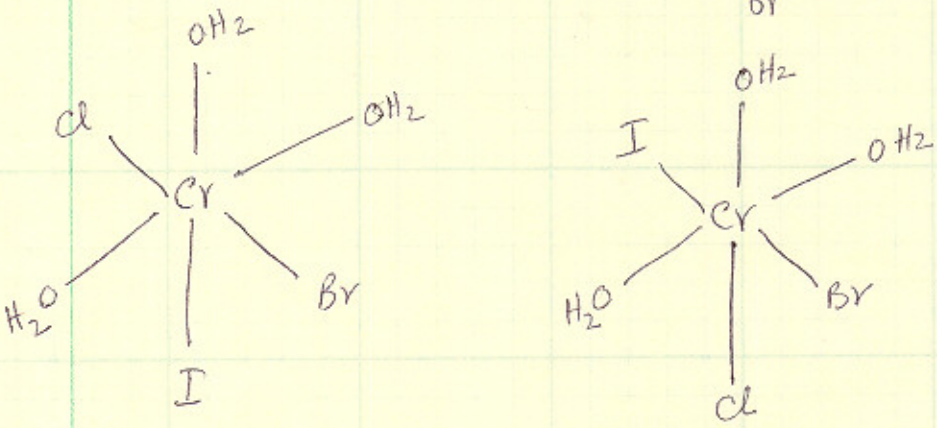

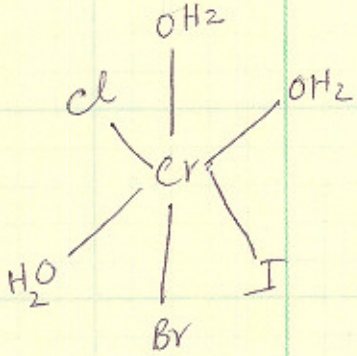

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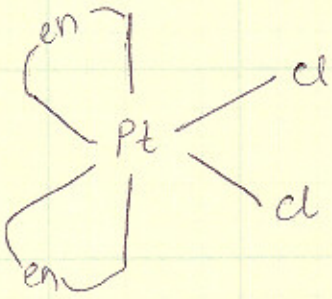

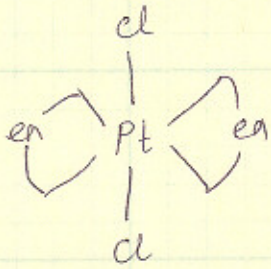

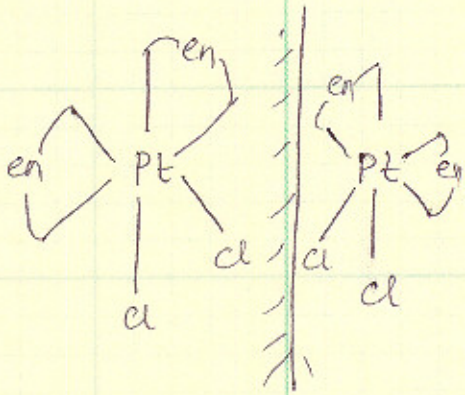

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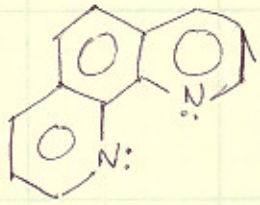

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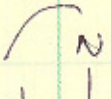
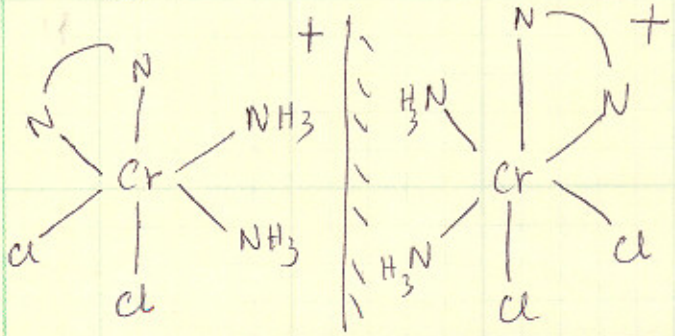
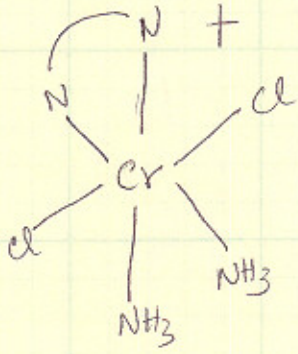
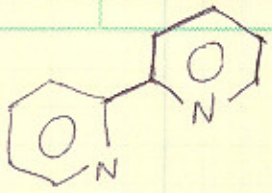
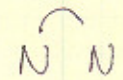
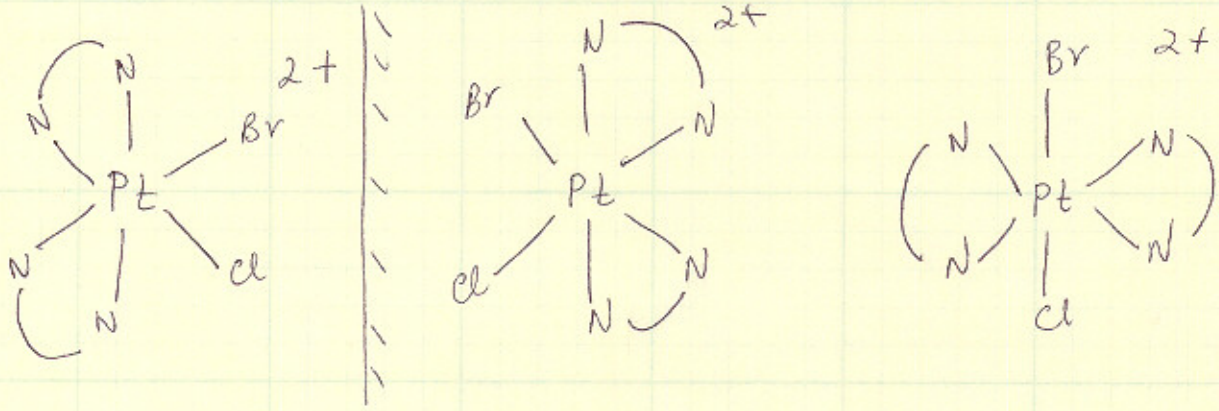
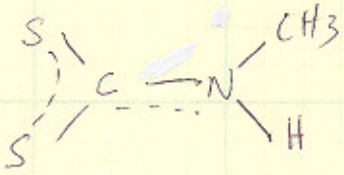


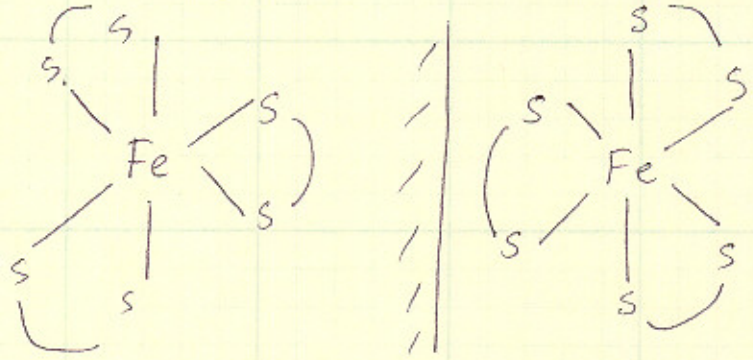


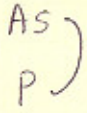


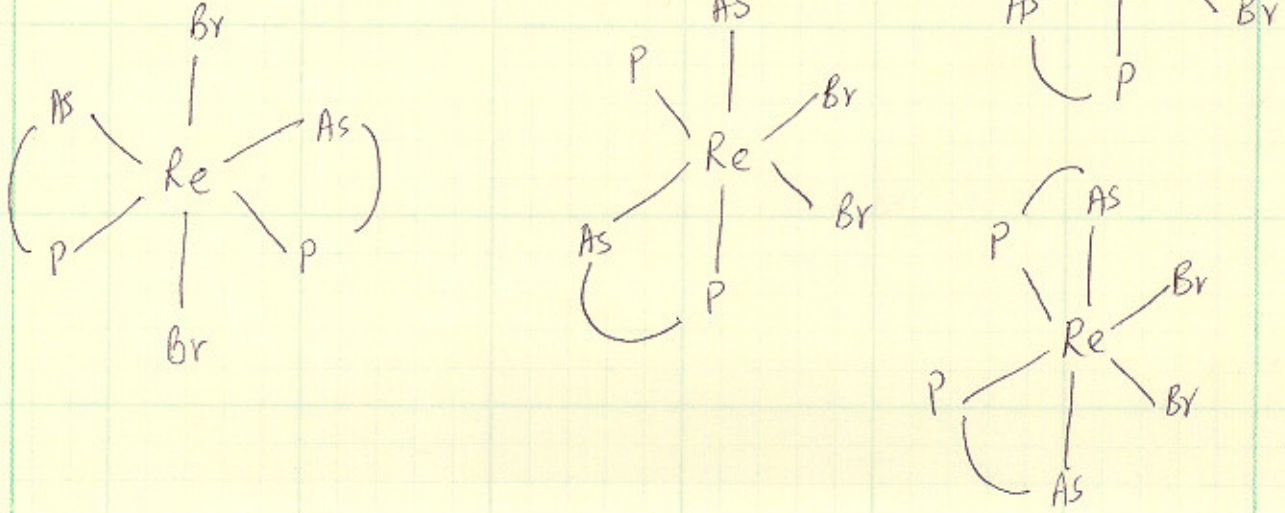
(g) bipy =  ≡ 



(h) dtc =  ≡ 



(i) arphos ≡ 



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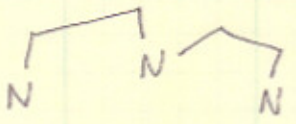
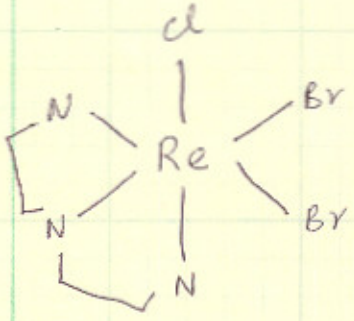
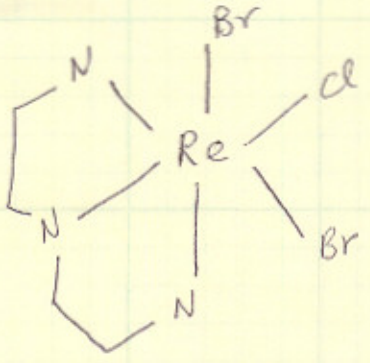
(j) dien ≡ 





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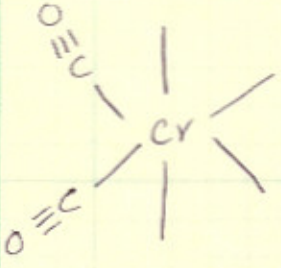
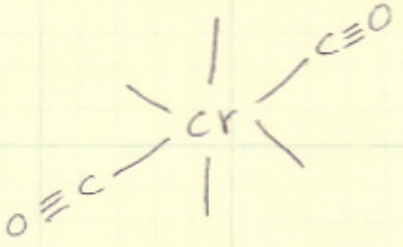


cis-(CO)

this has two IR active CO stretches

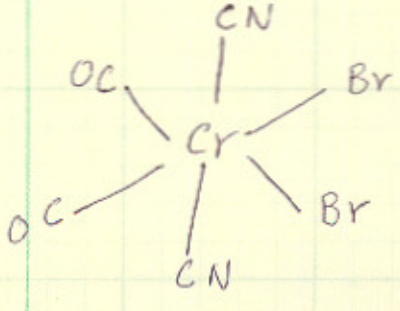


trans-(CO)

this has only one IR active CO stretch [the symm. stretch is not IR active]

For the given compound, there are two bands attributed to CO stretch. ∴ The two CO groups must be cis to each other.

Similarly since there is only one band attributed to C≡N stretch, the two CN groups must be trans to each other.

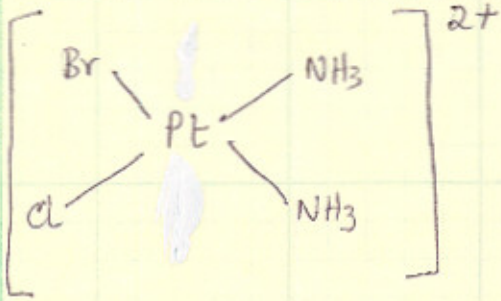


← most likely structure.

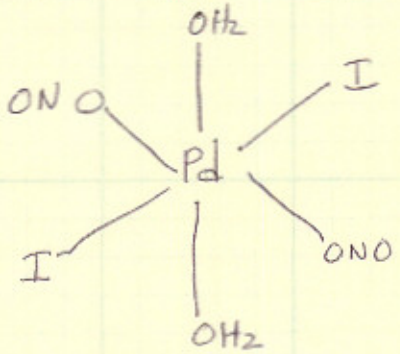
6/

(13)

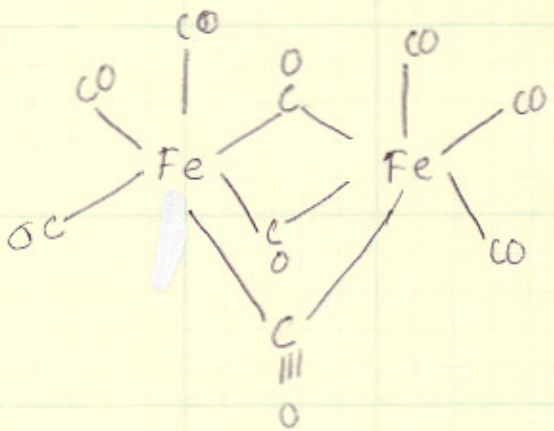
(a)


Br
NH3
Pt
Cl
NH3
2+

(b)


OH2
ON O
I
Pd
I
ONO
OH2

(c)


CO
CO
O
C
CO
CO
Fe
Fe
OC
C
O
CO
C
O