

Ligand  $\rightarrow$   $\ell\cdot p$  donating species

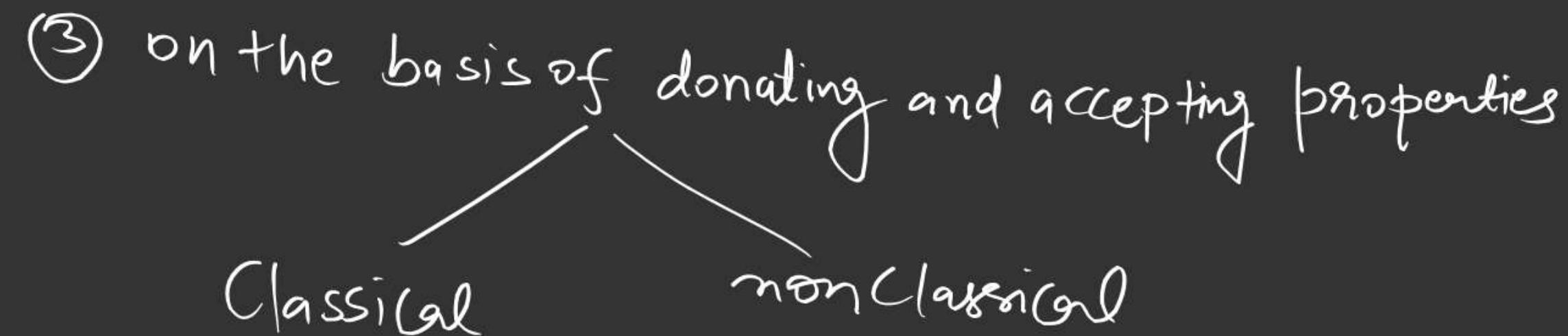
Classification of ligand

① On the basis of charge

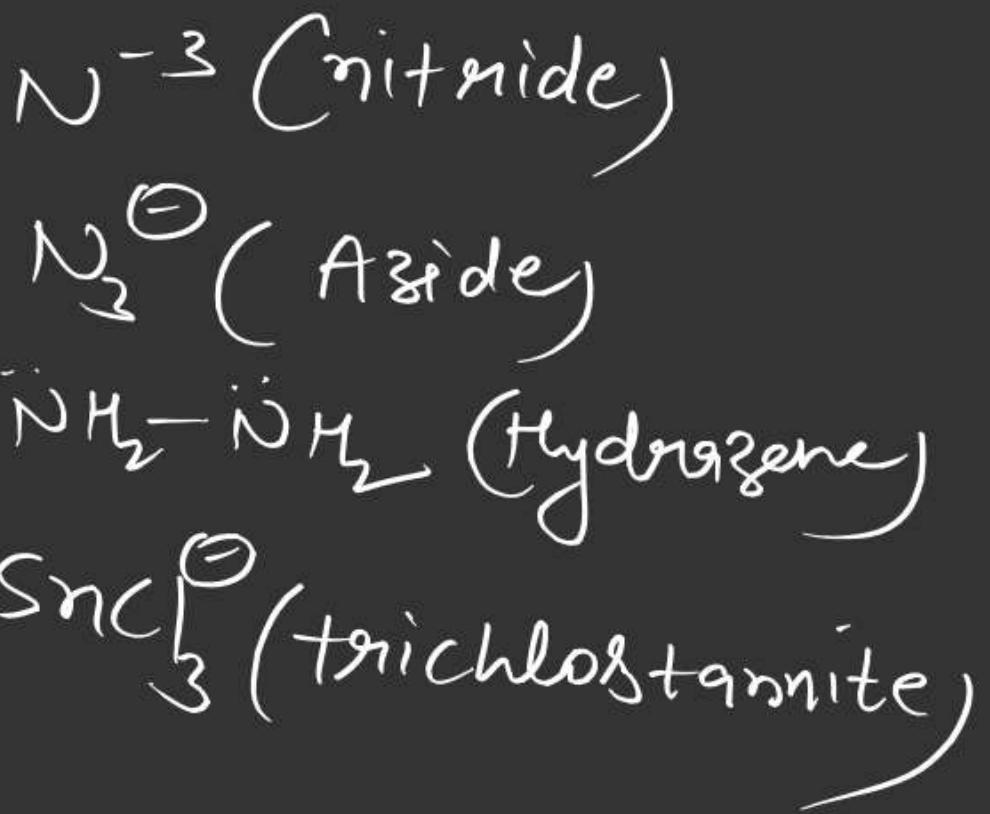
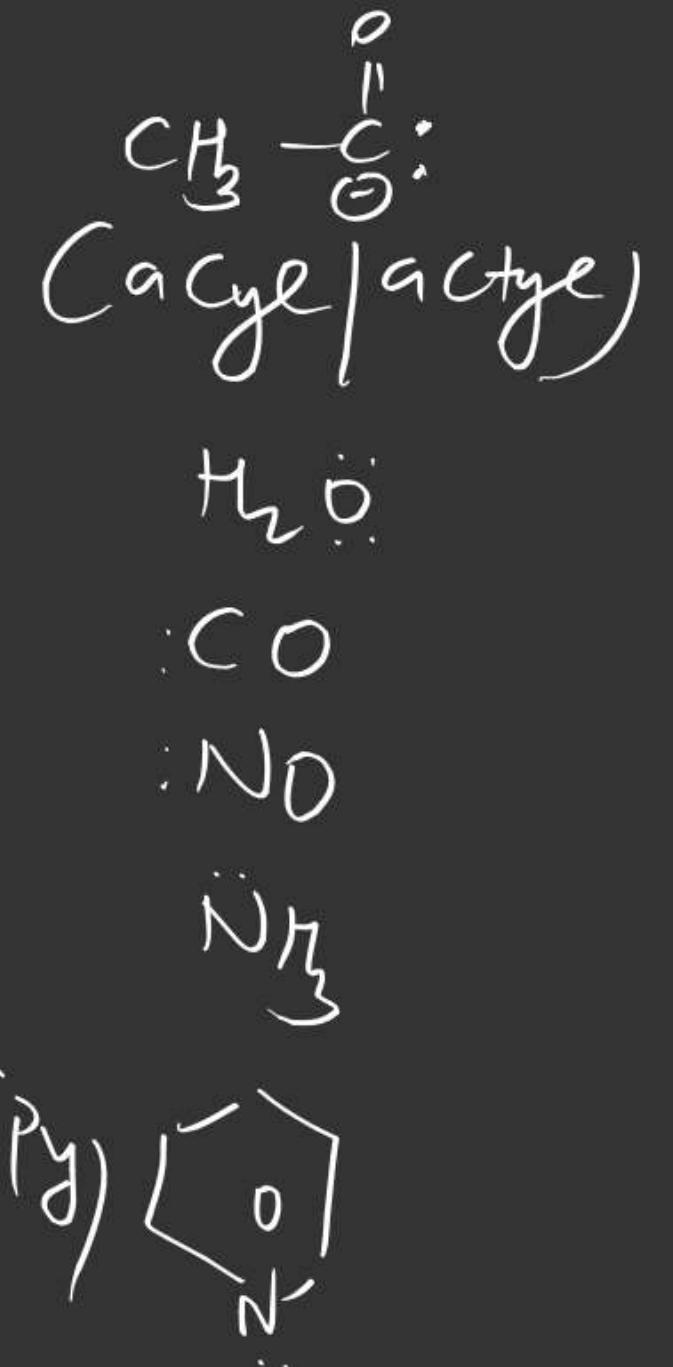
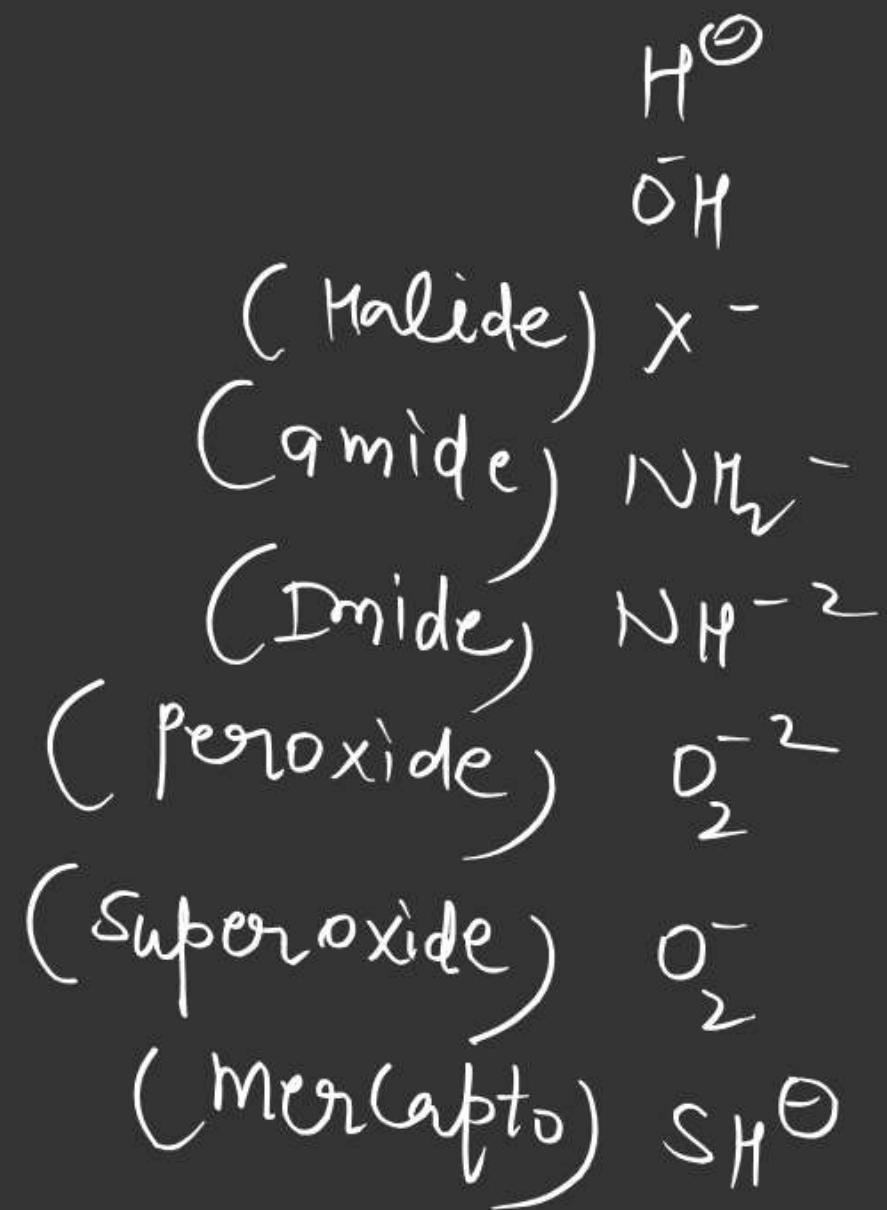
$\left[ \begin{array}{l} -\text{ive} \\ +\text{ive} \\ \text{neutral} \end{array} \right]$

② On the basis of donor atom

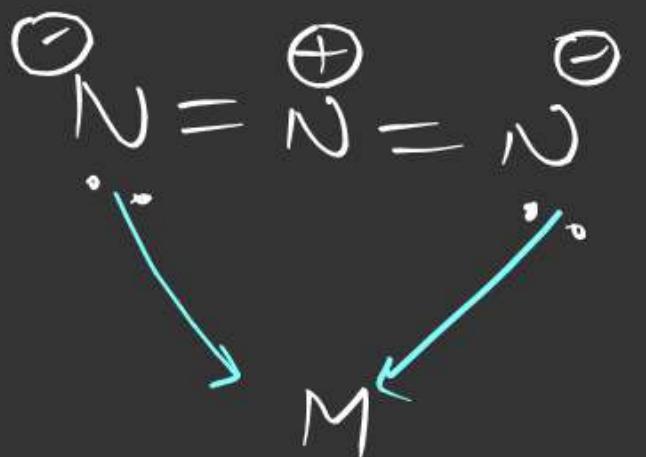
$\left[ \begin{array}{l} \text{Monodentate} \\ \text{Bidentate} \\ \text{Polydentate} \\ \text{Ambidentate} \end{array} \right]$



① Monodentate

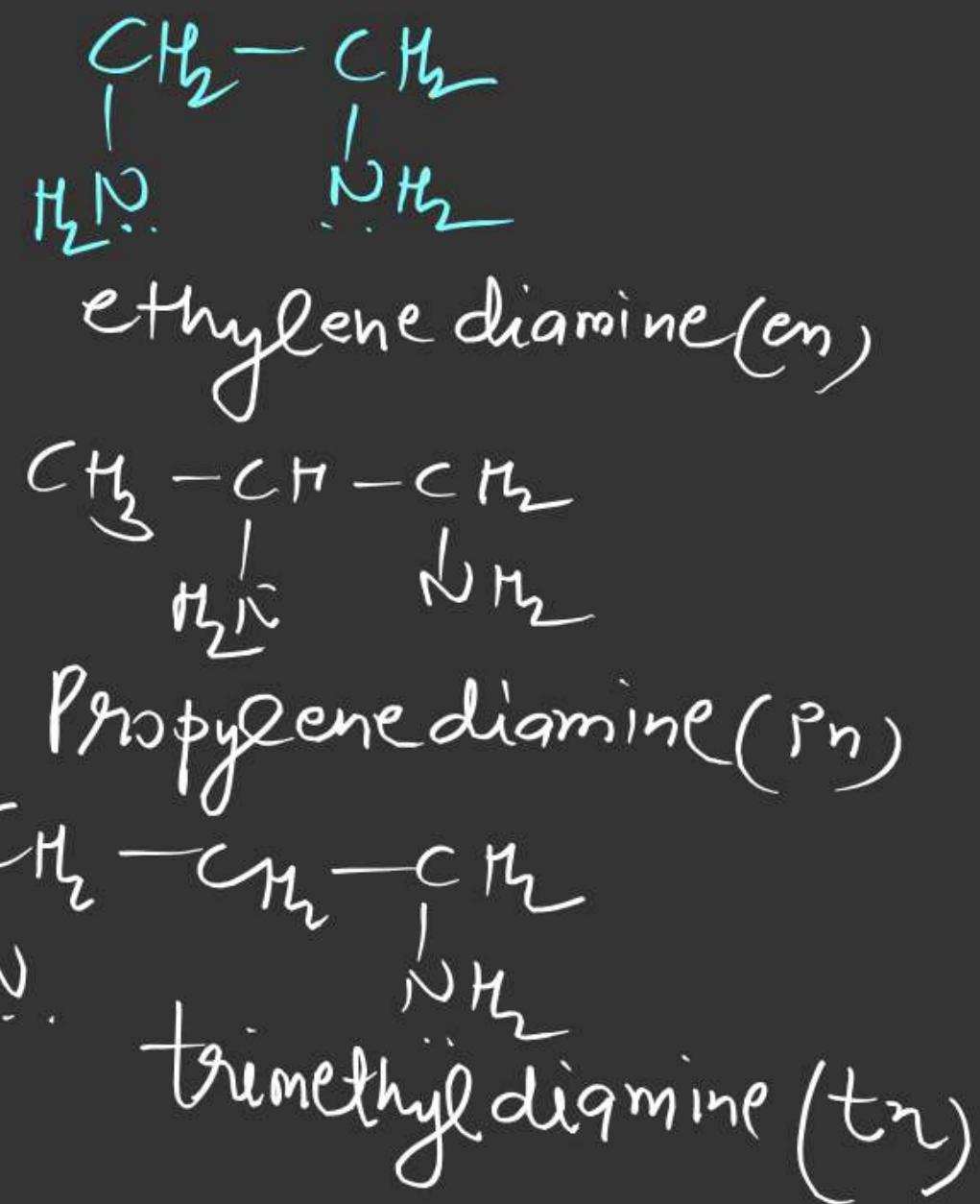
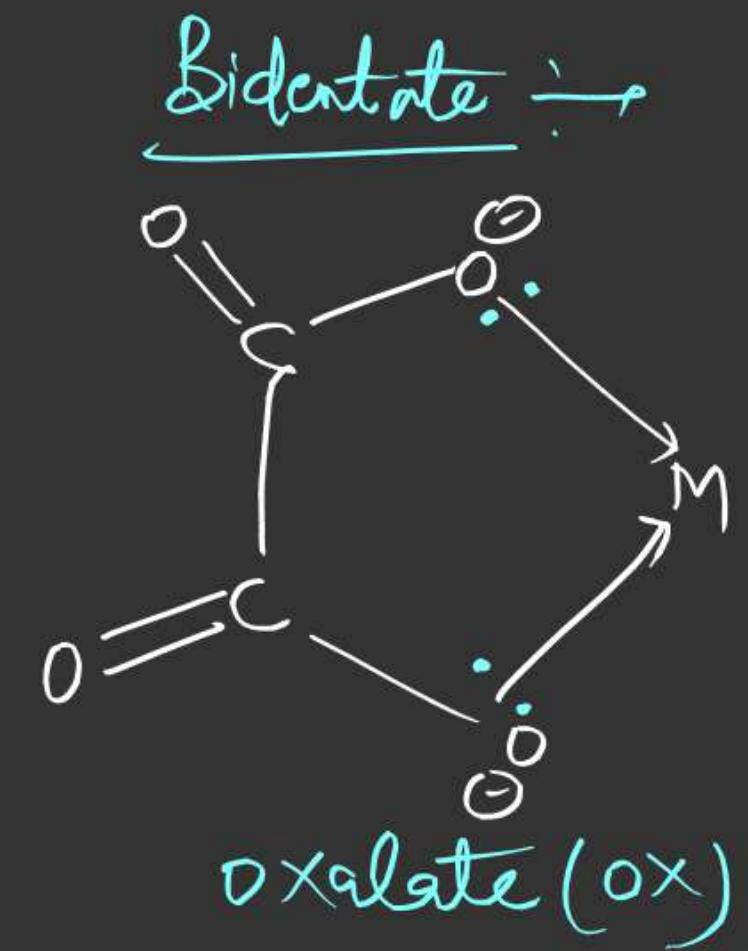


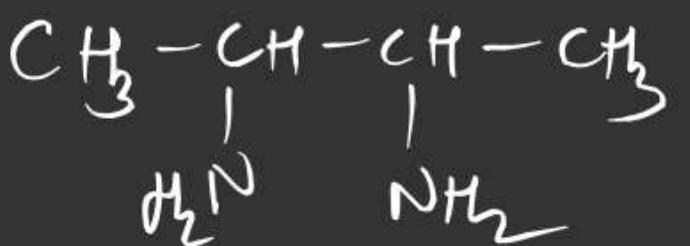
one  $\text{N}_3^-$  and  $\text{NH}_2-\text{NH}_2$  acts as a Monodentate ligand explain why



Note  $\rightarrow$  3 memb. Ring  
and four memb. Ring  
unstable







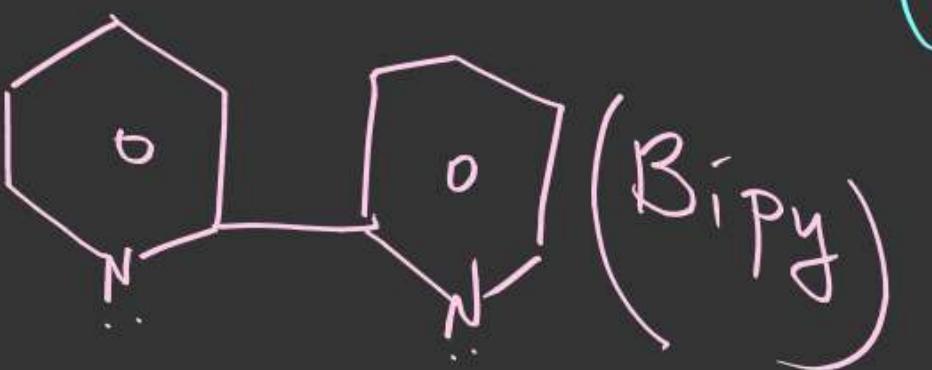
Butylenediamine (Bn)

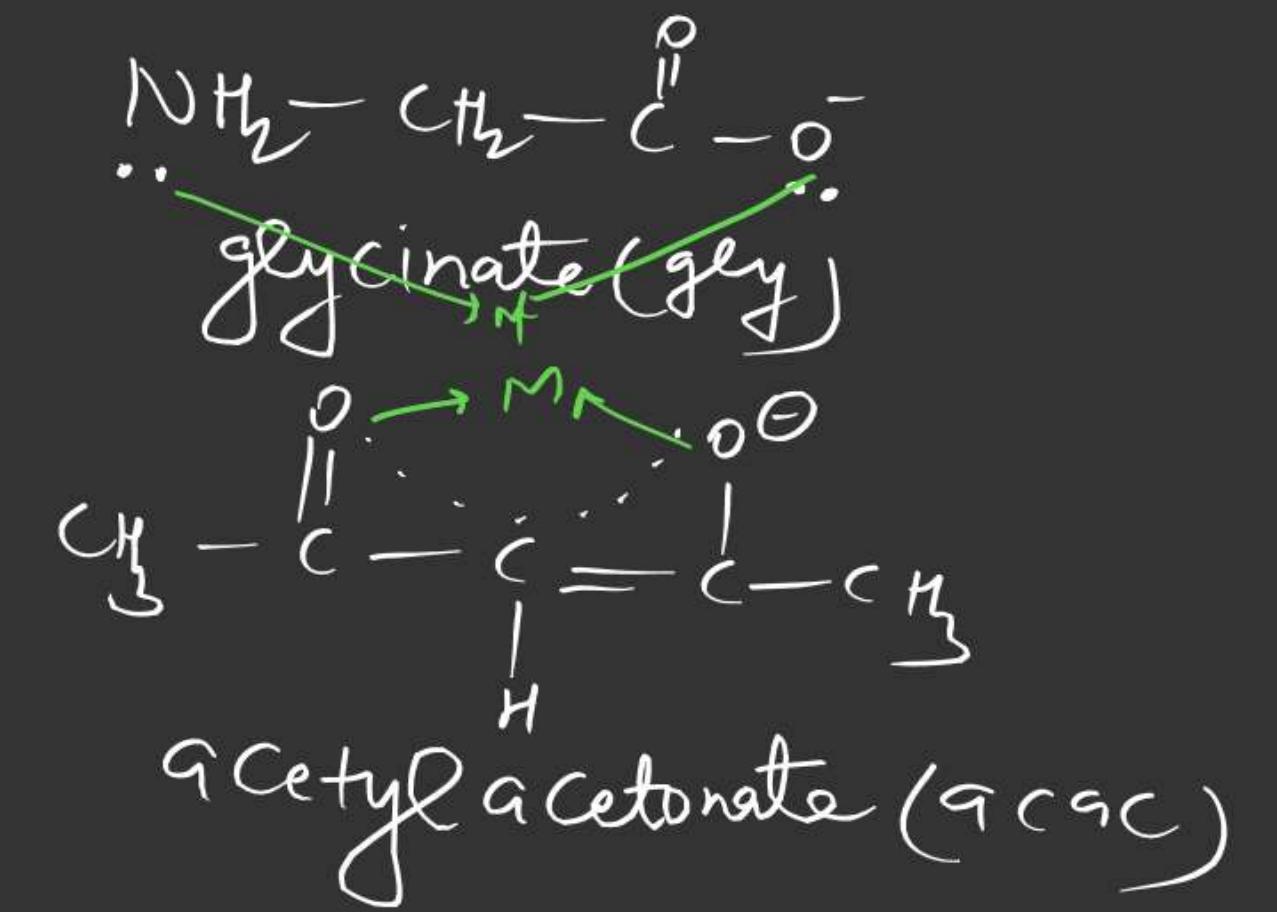


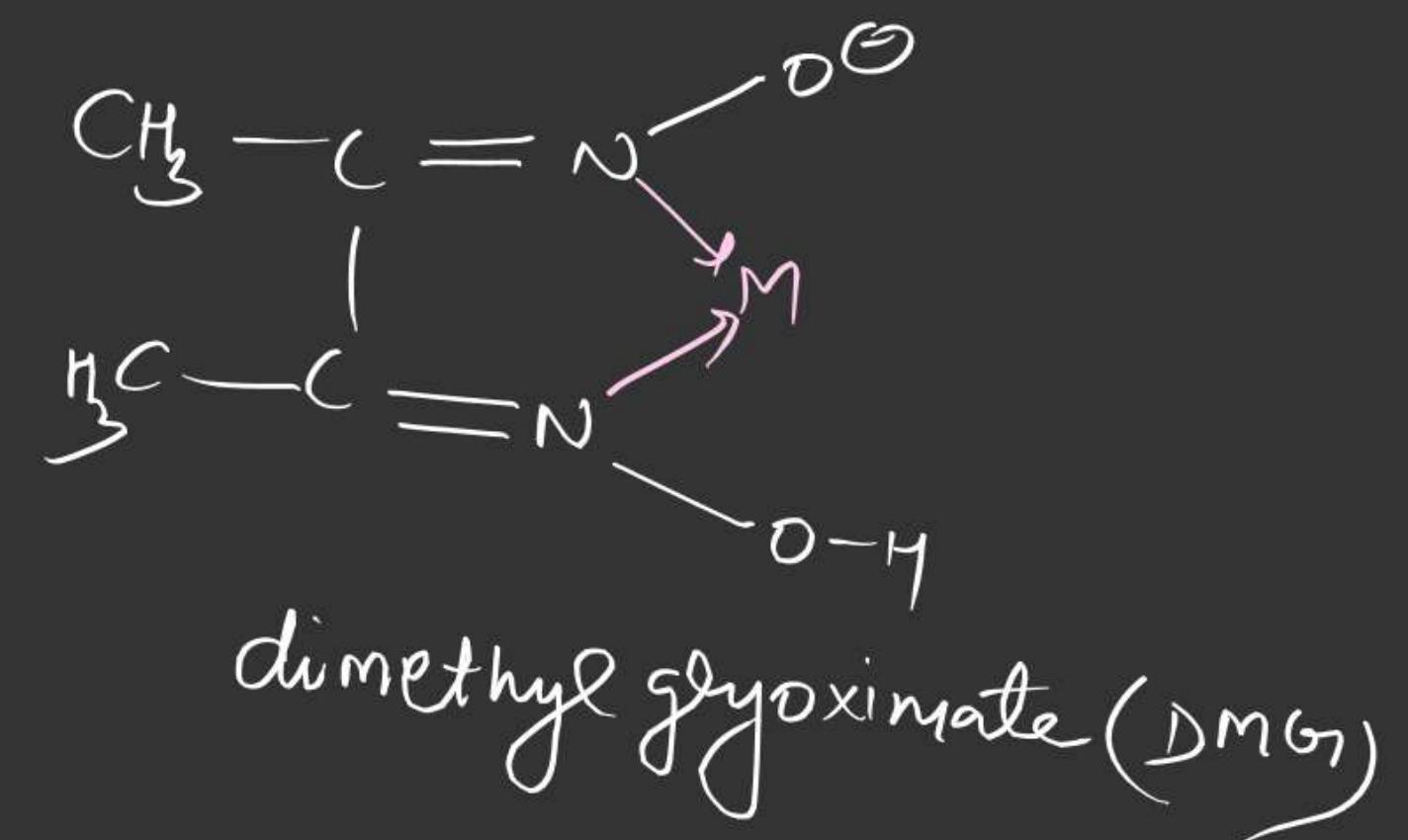
1,10 phenanthroline

Ortho phenanthroline (Phen)

(-)

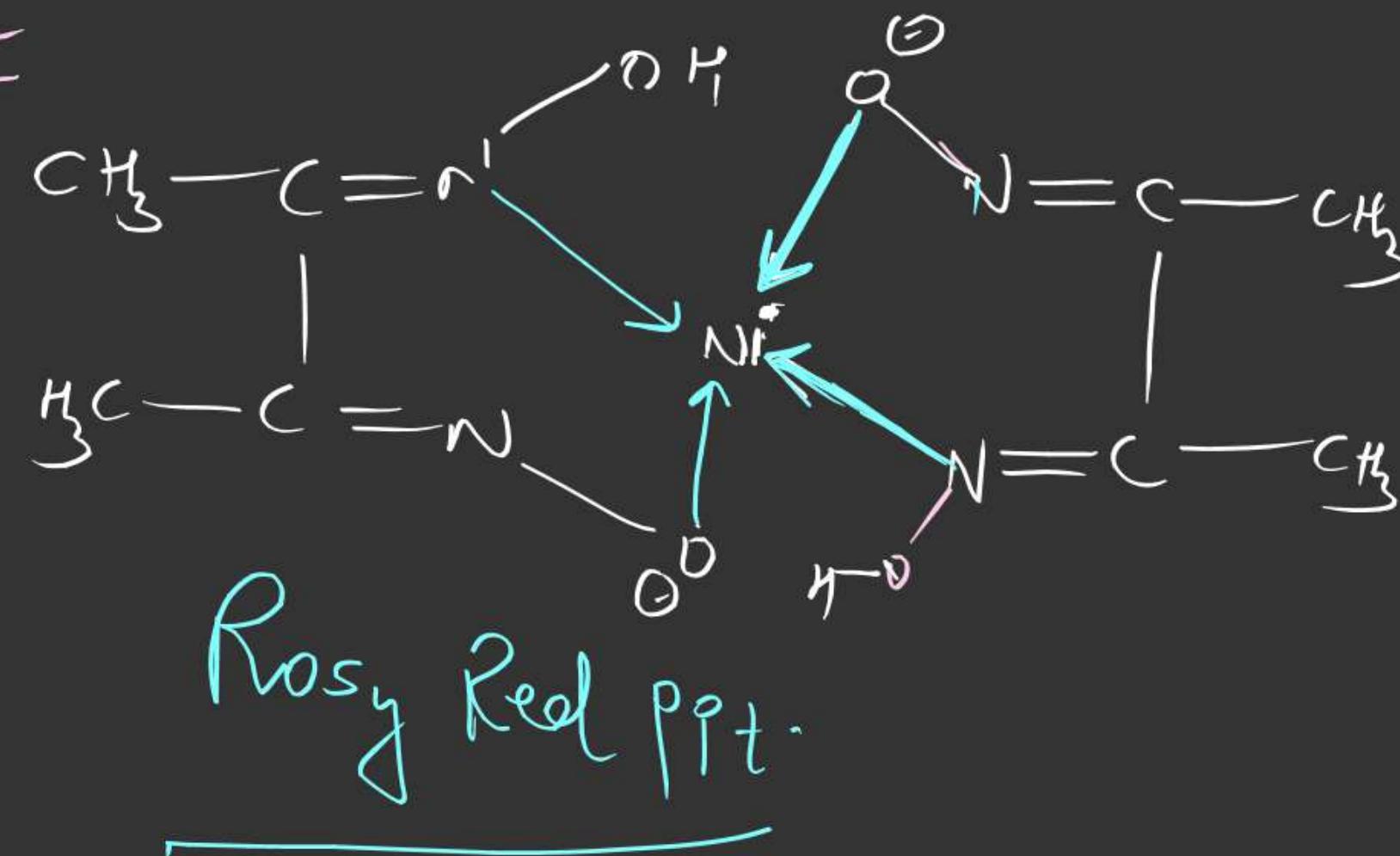






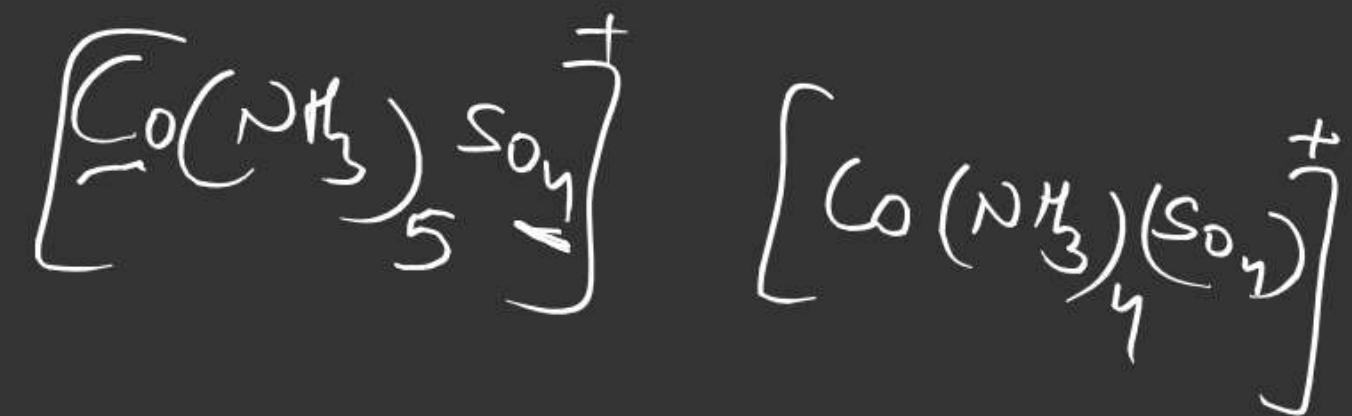
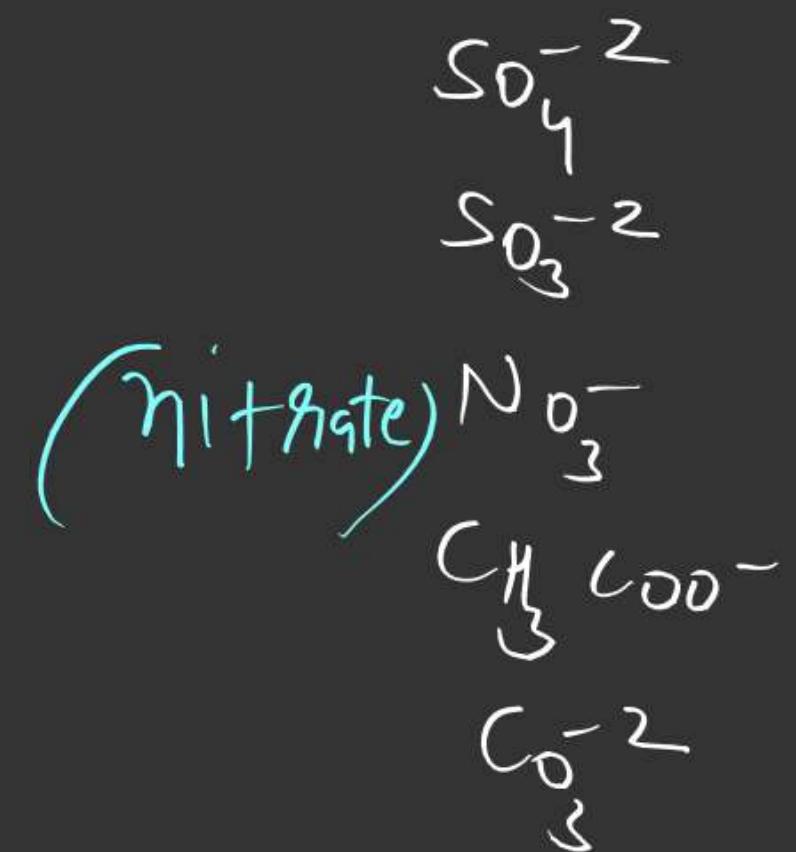
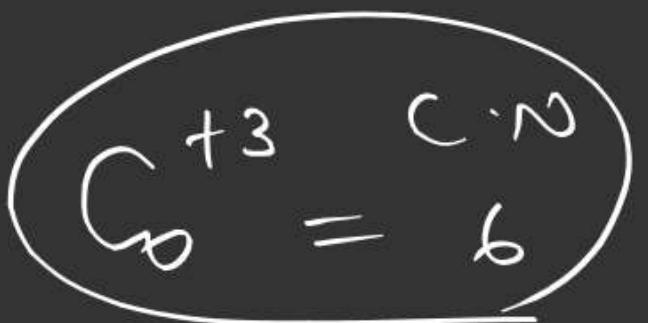
one draw the structure of  
 $[\text{Ni}(\text{dmg})_2]$

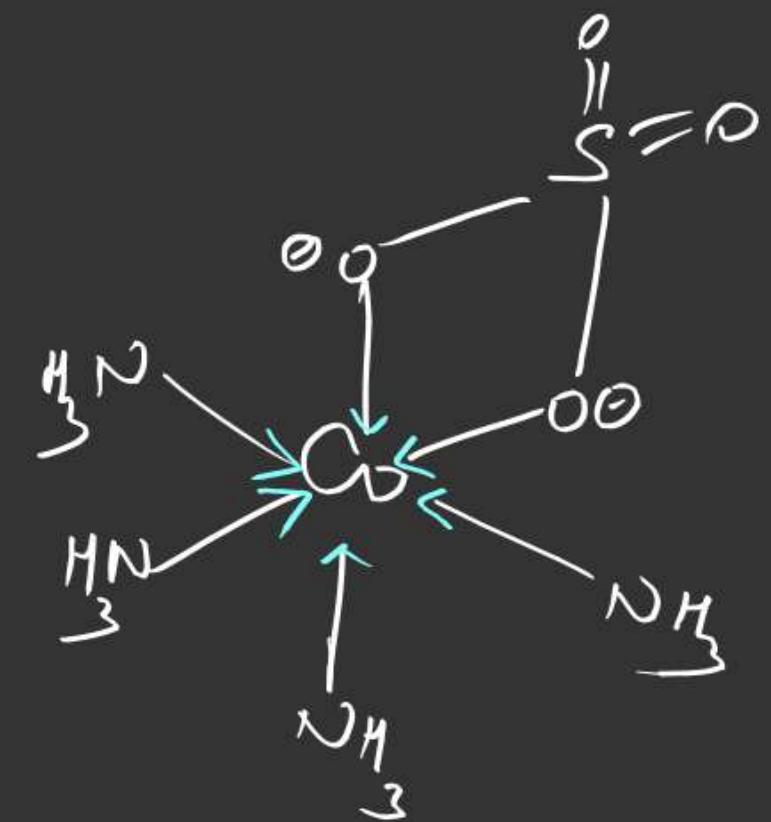
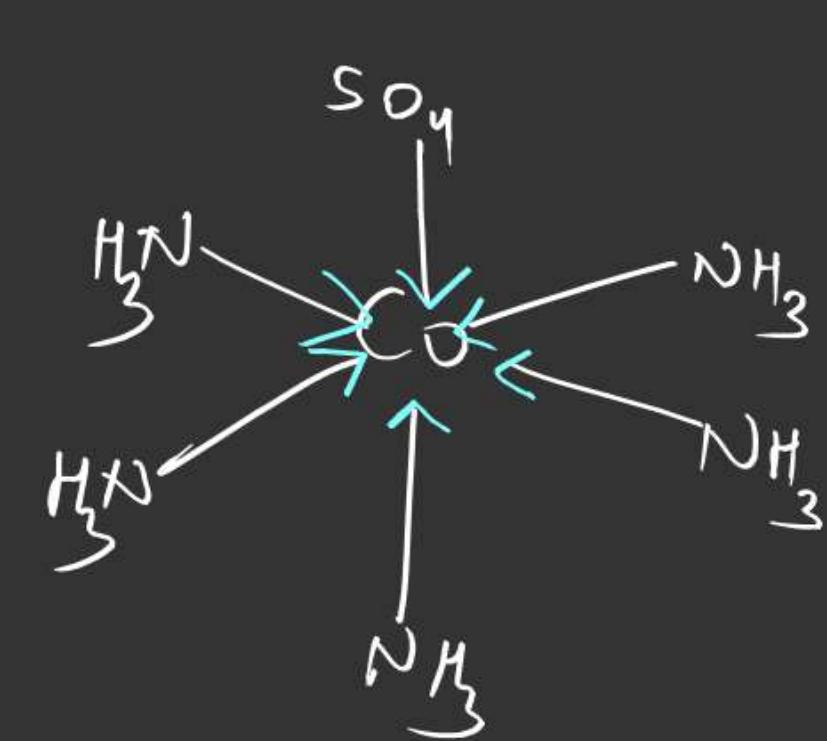
total rings = four  
 two = Six memb. Ring  
 (H-Bonding)  
 two = five memb. Ring  
 (Co-ordinate bond)

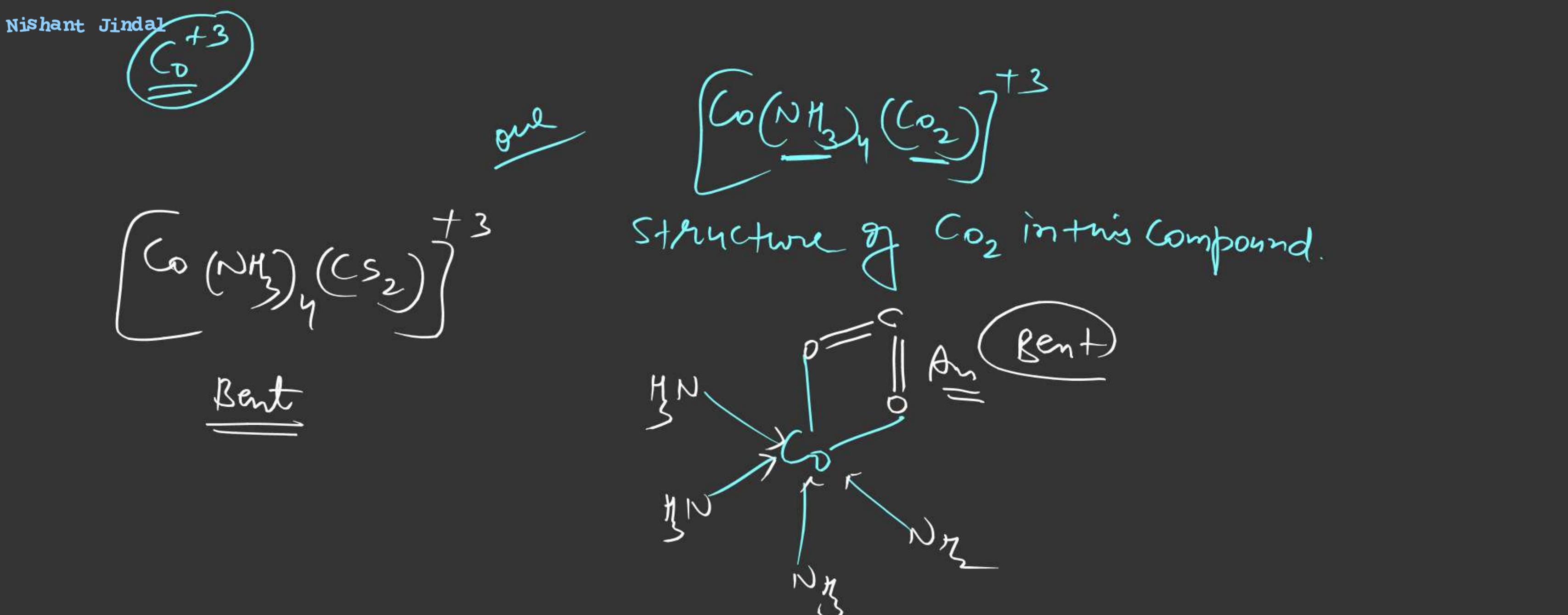


Flexidentate  $\rightarrow$  ligand which can act as  
Monodentates as well as

Bidentate

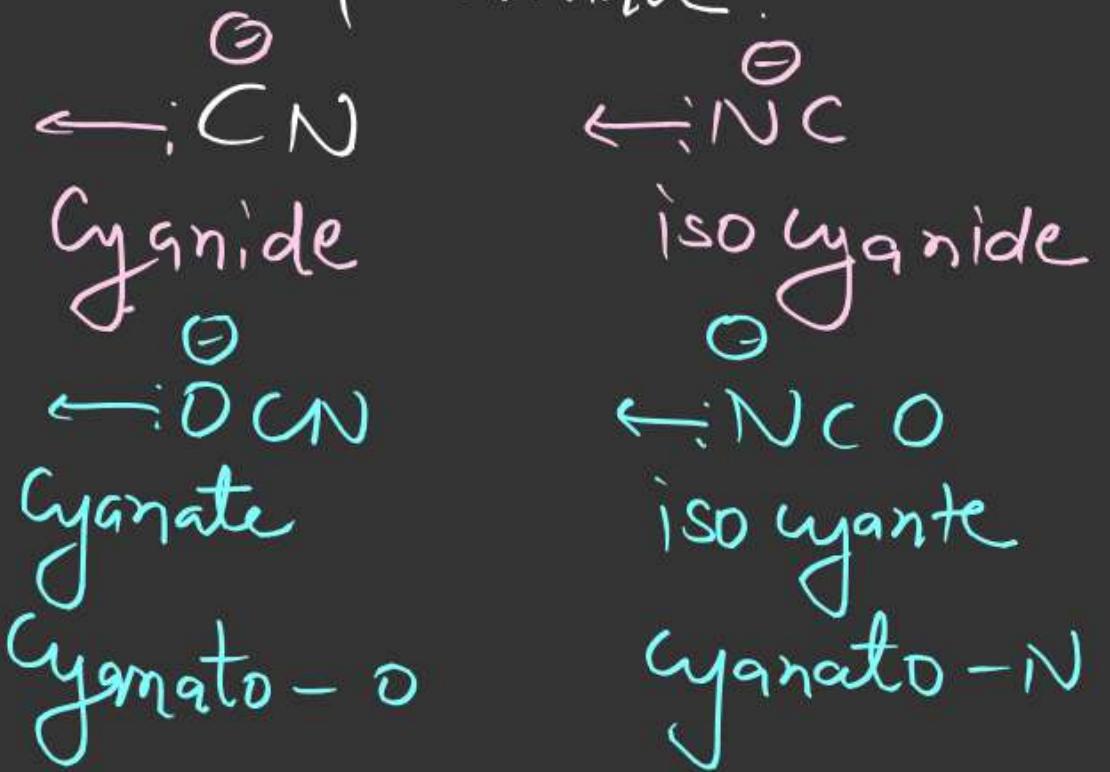






Ambidentate ligand → more than two donor

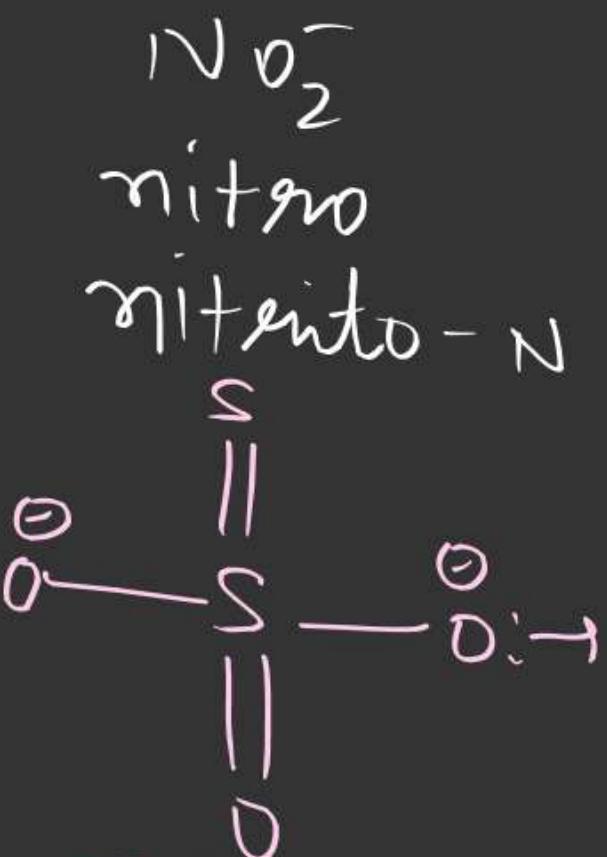
When ligand have two or more donor site but at the time of donation only one can donate.



5

This year

thio wanto - s

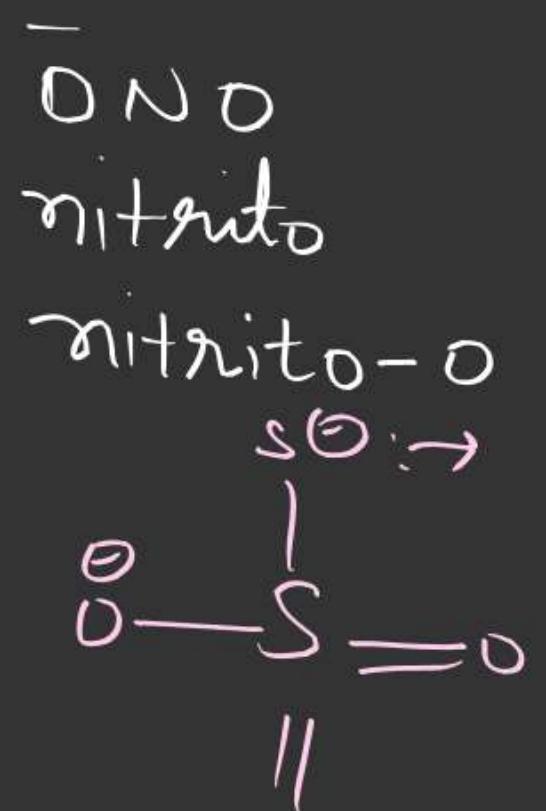


## Thiosulphato -

0  
NCS

isothiomate

thiocyanato- $N$



# Diosulfphato-s

## Macrocyclic effect

number of stable rings ↑ stability of complex ↑

