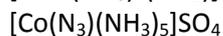
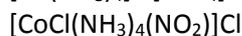
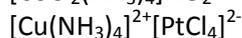


## Answer on Question#37708-Chemistry-Inorganic Chemistry

### Questions

1) Help me naming this complex compounds. Thank You in advance.



2) What are ambidentate ligands? Give Examples.

### Answers

1)

$[\text{CoCl}_2(\text{NH}_3)_4]\text{NO}_2$  – tetraamminedichlorocobalt(III) nitrite

$[\text{Cu}(\text{NH}_3)_4]^{2+}[\text{PtCl}_4]^{2-}$  – tetraamminecopper(II) tetrachloroplatinate(II)

$[\text{CoCl}(\text{NH}_3)_4(\text{NO}_2)]\text{Cl}$  – tetraamminechloronitrocobalt(III) chloride (if  $\text{NO}_2$  group is attached to the central atom by N ( $\text{O}_2\text{N}^-$ )) or tetraamminechloronitritocobalt(III) chloride (if  $\text{NO}_2$  group is attached to the central atom by O ( $\text{ONO}^-$ ))

$[\text{Co}(\text{N}_3)(\text{NH}_3)_5]\text{SO}_4$  – pentaammineazidocobalt(III) sulphate

2)

The ambidentate ligands are ligands, which can attach to the central atom in two places but not both.

For example, nitrite ion ( $\text{NO}_2^-$ ) is ambidentate ligand, because it can be attached either by N atom or by O.

Another examples of ambidentate ligands are:

sulphite ( $\text{SO}_3^{2-}$ )

thiocyanate ( $\text{SCN}^-$ ) – isothiocyanate ( $\text{NCS}^-$ )

selenocyanate ( $\text{SeCN}^-$ ) – isoselenocyanate ( $\text{NCSe}^-$ )