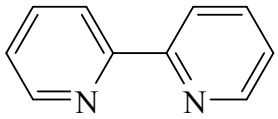
Marks 5

- Complete the following table. NCS^- = isothiocyanate ion

bipy = 2,2'-bipyridine = $(C_5H_4N)_2$ = 

Formula	$K_2[Zn(CN)_4]$	$[Co(bipy)(NH_3)_4]Cl_3$	$[Co(bipy)_2(NCS)_2]$
Oxidation state of transition metal ion	**+2 or II**	**+3 or III**	**+2 or II**
Coordination number of transition metal ion	**4**	**6**	**6**
Number of *d*-electrons in the transition metal ion	**10**	**6**	**7**
Coordination geometry of the complex ion	**tetrahedral**	**octahedral**	**octahedral**
List all the ligand donor atoms	**4 × C**	**2 × N (from bipy)** **4 × N (from NH_3)**	**4 × N (from bipy)** **2 × N (from NCS^-)**