

Marks
8

- Use the information already provided to complete the following table.
(ox = oxalate = $\text{C}_2\text{O}_4^{2-}$)

Formula	$[\text{CrCl}_2(\text{NH}_3)_4]^n$	$[\text{Fe}(\text{ox})_3]^n$	$[\text{ZnCl}_2(\text{NH}_3)_2]^n$
Oxidation state of transition metal ion		+III	
Number of <i>d</i> -electrons in the transition metal ion			10
Number of unpaired <i>d</i> -electrons in the transition metal ion			
Charge of complex (<i>i.e.</i> <i>n</i>)	1+		
Is the metal atom paramagnetic?			

The complex $[\text{PtCl}_2(\text{NH}_3)_2]$ has two isomers, while its zinc analogue (in the table) exists in only one form. Using diagrams where appropriate, explain why this is so.