

- Compounds of *d*-block elements are frequently paramagnetic. Using the box notation to represent atomic orbitals, account for this property in compounds of Co^{2+} .

Marks
2

Cobalt is in group 9 so Co^{2+} has $(9 - 2) = 7$ valence electrons: its configuration is $3d^7$. These electrons occupy the five $3d$ orbitals according to Hund's rule to minimise electron – electron repulsion.



It has 3 unpaired electrons and so it is paramagnetic.