CH 107 Assignment

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What I have learnt from this week's lectures:
This week's content explained the concepts of Valence Bond Theory which I have been studying since 11th grade. It was really fun to deeply study the concepts whose results we have been applying blindly till now.

We started off with solving Hamiltonian for H2 + and H2 molecules. We used Born Oppenheimer approximation to eliminate some terms and simplify the expression further. Then we resorted the use of Linear Cmbination of atomic orbitals of Hatom1 and Hatom2 to try solving for the Hamiltonan. Later then we came across S (Overlap Integral), Secular equation, J (Coulomb Integral) and K(Exchange Integral) to get the electronic states of H2.

From lecture-3 we learn about the hybridisation of orbitals using LCAO starting from sp hybridiation and ending at sp3. We solved for the coefficients of the combining orbitals and proved that even the change of axes will not change the net contribution of p orbitals or change the hybridisation itself.

What I find difficult to grasp in this week's lectures:
The terms Overlap Integral, Secular Equation, Coulomb integral and exchange integral where a bit hard to grasp at first. Other than those, other topics are clear to me.