

Figure 6.11 The energy of the levels of a hydrogen atom in a magnetic field are a smooth function of \mathcal{B} . For small \mathcal{B} , the splitting is uneven (the anomalous Zeeman effect), but for large \mathcal{B} , the splitting is even and only three lines are seen (the Lorentz triplet). A schematic diagram is shown for the 2p levels.

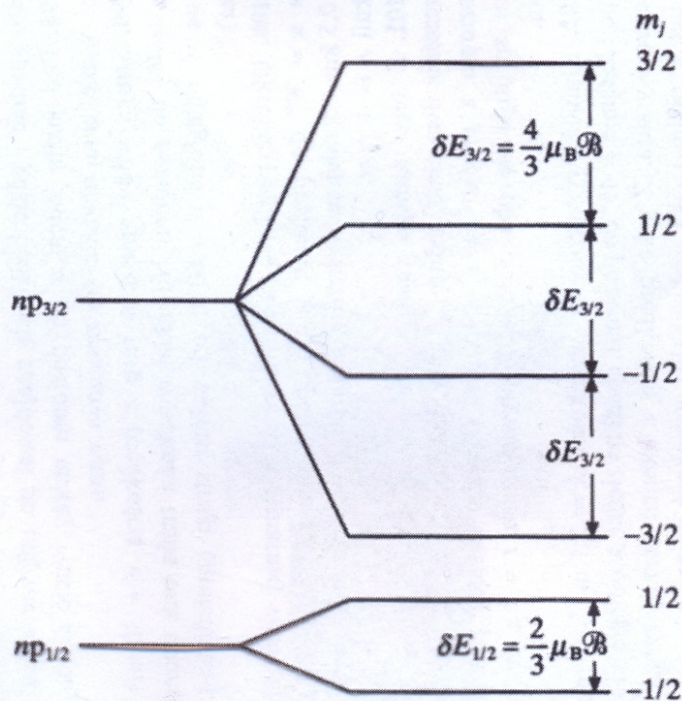


Figure 6.9 Splitting of $np_{3/2}$ and $np_{1/2}$ levels of atomic hydrogen in a weak magnetic field.

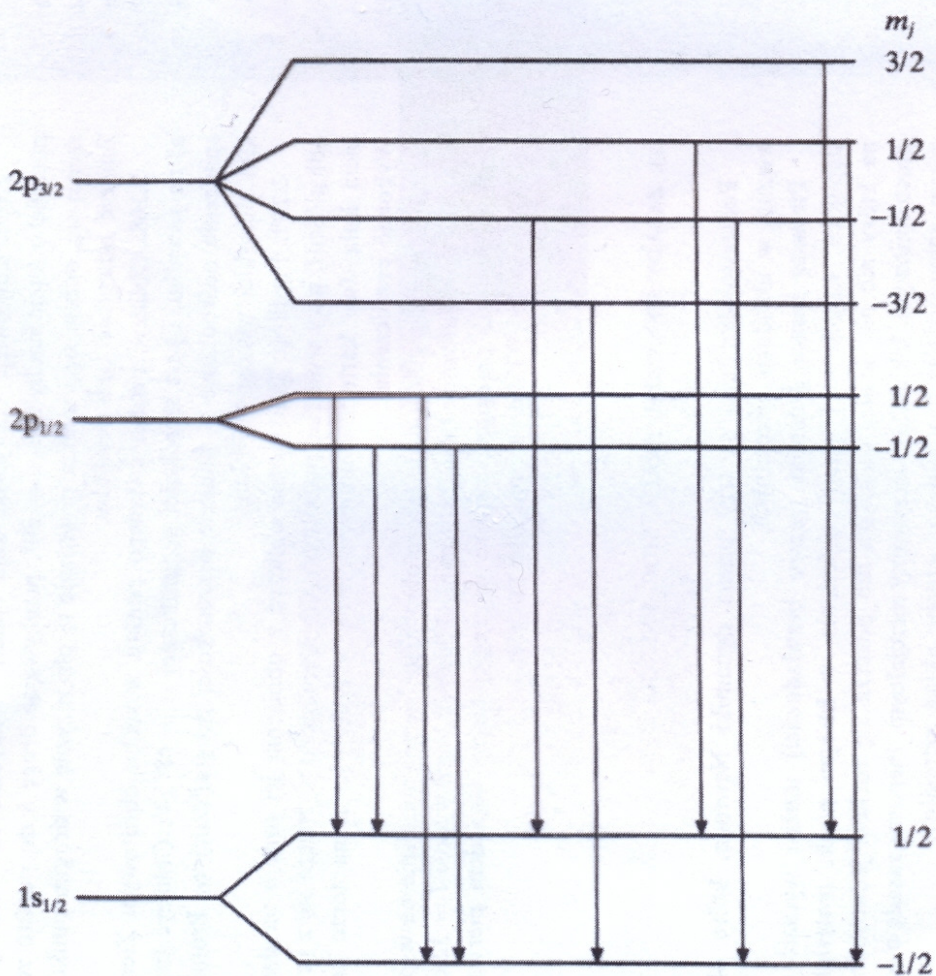


Figure 6.10 In electric dipole transitions between the $n = 2$ and $n = 1$ levels of atomic hydrogen, in a weak magnetic field, four lines result from the $2p_{1/2} \rightarrow 1s_{1/2}$ transitions and six lines from the $2p_{3/2} \rightarrow 1s_{1/2}$ transitions.