Recitation 2
EE 3161 – Spring 2008

1) A block of GaAs at room temperature is doped with beryllium with a concentration of $N_a = 2\times10^{17}$ cm^{-3}. What concentration of silicon must be added to the GaAs to make the material degenerate? (Assume that the silicon impurities are incorporated into the Ga sites in the lattice.)

2) How does the intrinsic carrier concentration of a block of undoped silicon change when the temperature rises from T=100K to T=300K? Does E_i move closer or further from the midgap?