Homework 6
EE 362 Electronic, Magnetic, & Optical Properties of Materials (Spring 2024)
Wednesday, March 6, 2024

1) 6.2 First, find the electron concentration at thermal equilibrium.

2) 6.6

3) 6.10 First, find the electron and hole concentrations at thermal equilibrium.

4) 6.14 First, find the electron and hole mobilities at thermal equilibrium (Hint: use graph). Second, find the minority charge carrier concentration as a function of time. Third, find the conductivity as a function of time.

5) 6.19 Hint: What is the ambipolar diffusion coefficient?

6) 6.30 First, find the electron and hole concentrations at thermal equilibrium. In part b), also find the excess charge carrier concentration.

Due Monday, March 18, 2024.

Notes:

➢ Carry *at least* 6 significant figures on constants/parameters in calculations. Give answers with 4-5 significant figures.

➢ If a solution requires the use of a graph, include the graph with work shown.