Homework 6
EE 362 Electronic, Magnetic, & Optical Properties of Materials (Spring 2026)
Wednesday, March 4, 2026

1) 6.1 First, find the electron and hole concentration at thermal equilibrium.
2) 6.6 Modify the problem to change the recombination rate to 4×10^{19} cm^{-3}-s^{-1}.
3) 6.10 First, find the electron and hole concentrations at thermal equilibrium.
4) 6.13 First, find the electron and hole concentrations at thermal equilibrium. [Hint: Remember first-order *RL* and *RC* circuit problems where a source turns on and then switches off?]
5) 6.19 For part a), also find the ambipolar diffusion coefficient.
6) 6.31 First, find the electron and hole concentrations at thermal equilibrium.

Due Monday, March 9, 2026.

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 graph with work/markings shown.
- Assume 300 K unless otherwise specified.