Homework 7
EE 362 Electronic, Magnetic, & Optical Properties of Materials (Spring 2024)
Wednesday, March 20, 2024

1) 7.2 Only for silicon
2) 7.3a Both linear and semilog plots.
3) 7.8a
4) For a uniformly doped ($N_a = 4 \times 10^{16}$ cm^{-3} on p-side and $N_d = 6 \times 10^{15}$ cm^{-3} on n-side) GaAs pn junction at 300 K with cross-sectional area 40×10^{-9} m^2, calculate x_n, x_p, W, $|E_{max}|$, C', and C when: a) $V_R = 0$ and b) $V_R = 2.4$ V.
5) 7.18
6) 7.20b

Due Monday, March 25, 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.