1. Read Section 9.2. Describe how the Einstein’s A and B coefficients for spontaneous and stimulation emission rates can be derived from the Fermi’s Golden rule quantum mechanically. (Einstein proposed his idea before quantum mechanics and his pioneer model is commonly taught to undergraduates in physics or laser theory.)

2. Problem 9.5 of the text.

3. Problem 9.6 of the text.

4. Problem 9.7 of the text with \( n=p=5.5 \times 10^{18} \text{ cm}^{-3} \).

5. Problem 9.8 of the text with 10nm quantum well.