

STUDY GUIDE 3

Readings:

- Chapter 18      This chapter describes the phenomenon of stimulated emission, which is the basis for all lasers. The subsections labeled "stimulated emission: quantum viewpoint" on p. 332, and "quantum viewpoint: photons per mode" on pp. 335 to 336 are optional readings, for those interested in a more advanced treatment.
- Chapter 19      Section 19-1 only. The mathematics of "rate equations" is used to determine how the gain in a laser medium changes as the light intensity builds up. This is important for understanding optical amplifiers, and also plays a key role in understanding the efficiency of lasers.

Homework #3 (due Nov. 21):

Problems from text

1. 18-2
2. 18-3
3. 18-5
4. 18-6
5. 18-10
6. 18-11
7. 19-2
8. 19-3