

STUDY GUIDE 5

Readings:

- Chapter 21      This chapter considers the frequency spectrum of the laser output in some detail. Methods for controlling the laser wavelength are described.
- Chapter 22      The principles of pulsed lasers are considered in this chapter. Two important methods are emphasized: Q-switching and mode-locking.
- Chapter 23      This chapter gives an overview of a few important types of lasers. Optically pumped lasers include ruby, neodymium, and other rare earth doped solid state lasers. Special treatment is given for fiber lasers, a new and increasingly important type of laser. In this course, the mathematics of "optical transparency" given on pp. 432-433 will not be emphasized, but you can look through these pages (and example 23-2) as optional reading. Other optically pumped lasers include dye lasers, and Ti:sapphire lasers.

Electrically pumped lasers include the well-known low power HeNe laser, the higher power argon ion laser, the ultraviolet excimer laser, and the infrared CO<sub>2</sub> laser.

Homework #5 (due Dec. 12):

Ch. 21: problems 3, 4, 5, 7

Ch. 22: problems 1, 3, 4, 6, 11, 12