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3.4.1 Ruby Laser 3.4.2 Semiconductor Lasers; 3.5 Wave-Particle Duality; 3.6 Laser Rate Equations; 3.7 Review of Semiconductor Physics; 3.7.1 The PN Junctions; 3.7.2 Spontaneous and Stimulated Emission at the PN Junction; 3.7.3 Direct and Indirect Band-Gap Semiconductors; 3.8 Semiconductor Laser Diode; 3.8.1 Heterojunction Lasers; 3.8.2 Radiative and Non-Radiative Recombination; 3.8.3 Laser Rate Equations; 3.8.4 Steady-State Solutions of Rate Equations; 3.8.5 Distributed-Feedback Lasers; 3.9 Additional Examples; Exercises; Further Reading; References
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4.8 Partial Response Signals*

Sommario/riassunto

Fiber-optic communication systems have advanced dramatically over the last four decades, since the era of copper cables, resulting in low-cost and high-bandwidth transmission. Fiber optics is now the backbone of the internet and long-distance telecommunication. Without it we would not enjoy the benefits of high-speed internet, or low-rate international telephone calls. This book introduces the basic concepts of fiber-optic communication in a pedagogical way. The important mathematical results are derived by first principles rather than citing research articles. In addition, physical i

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