

Jacob Millman And Arvin Grabel Microelectronics 2nd Edition

Designed specifically for undergraduate students of Electronics and Electrical Engineering and its related disciplines, this book offers an excellent coverage of all essential topics and provides a solid foundation for analysing electronic circuits. It covers the course named Electronic Devices and Circuits of various universities. The book will also be useful to diploma students, AMIE students, and those pursuing courses in B.Sc. (Electronics) and M.Sc. (Physics). The students are thoroughly introduced to the full spectrum of fundamental topics beginning with the theory of semiconductors and p-n junction behaviour. The devices treated include diodes, transistors—BJTs, JFETs and MOSFETs—and thyristors. The circuitry covered comprises small signal (ac), power amplifiers, oscillators, and operational amplifiers including many important applications of those versatile devices. A separate chapter on IC fabrication technology is provided to give an idea of the technologies being used in this area. There are a variety of solved examples and applications for conceptual understanding. Problems at the end of each chapter are provided to test, reinforce and enhance learning.

Electronic Circuit Design Ideas covers a wide variety of electronic circuit design, which consists of a circuit diagram, waveforms, and an explanation of how the circuit works. This text contains 14 chapters and starts with a review of the principles of digital circuits and interface circuits frequently used in circuit design. The next chapters describe the commonly used timer, op-amp, and amplifier circuits. Other chapters present some examples of waveform generators and oscillators used in circuit design. This work also looks into other classifications of circuits, including phase-locked loop, power-supply, and voltage regulator circuits. The final chapters are devoted to the methods of controlling DC servomotors and stepper motors. These chapters also examine other design ideas, specifically the use of slotted optical sensor based revolution detector, photodiode and magnetic transducer detector, and FSK circuit. This book will prove useful to electrical engineers, electronics professionals, hobbyists, and students.

Test Prep for Analog Electronics—GATE, PSUS AND ES Examination

The Physics of Information Technology explores the familiar devices that we use to collect, transform, transmit, and interact with electronic information. Many such devices operate surprisingly close to very many fundamental physical limits. Understanding how such devices work, and how they can (and cannot) be improved, requires deep insight into the character of physical law as well as engineering practice. The book starts with an introduction to units, forces, and the probabilistic foundations of noise and signalling, then progresses through the electromagnetics of wired and wireless communications, and the quantum mechanics of electronic, optical, and magnetic materials, to discussions of mechanisms for computation, storage, sensing, and display. This self-contained volume will help both physical scientists and computer scientists see beyond the conventional division between hardware and software to understand the implications of physical theory for information manipulation.

Providing practical information, this book coordinates the physical understanding of electronics with a theoretical and mathematical basis. With pedagogical use of second color, it covers devices in one place so that circuit characteristics are developed early.

Integrated circuits are finding ever wider applications through a range of industries. Introduction to VLSI Process Engineering presents the design principles for devices, describes the overall VLSI process, and deals with the essential manufacturing technologies and inspection procedures.

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