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Problems; 3. BOOLEAN ALGEBRA AND DIGITAL LOGIC GATES; 3.1 Basic Logic Operations; 3.1.1 NOT Operation; 3.1.2 OR Operation; 3.1.3 AND Operation; 3.2 Other Logic Operations; 3.2.1 NOR Operation
3.2.2 NAND Operation3.2.3 Exclusive-OR Operation (XOR); 3.2.4 Exclusive-NOR Operation (XNOR); 3.3 IEEE Symbols for Logic Gates; 3.4 Positive and Negative Logic; 3.5 Boolean Algebra; 3.5.1 Boolean Identities; 3.5.2 Simplification Using Boolean Identities; 3.5.3 Consensus Theorem; 3.5.4 Complement of a Boolean Function; 3.6 Standard Representations; 3.7 Karnaugh Maps; 3.7.1 Two-Variable K-Map; 3.7.2 Three-Variable K-Map; 3.7.3 Four-Variable K-Map; 3.7.4 Prime Implicants; 3.7.5 Expressing a Function in Product-of-Sums Form Using a K-Map; 3.7.6 Don't Care Conditions; 3.7.7 Five-Variable K-Map
3.8 Quine-McCluskey Method3.9 Implementation of Digital Circuits with NAND, NOR, and Exclusive-OR Exclusive-NOR Gates; 3.9.1 NAND Gate Implementation; 3.9.2 NOR Gate Implementation; 3.9.3 XOR / XNOR Implementations; Questions and Problems; 4. COMBINATIONAL LOGIC DESIGN; 4.1 Basic Concepts; 4.2 Analysis of a Combinational Logic Circuit; 4.3 Design of a Combinational Circuit; 4.4 Multiple-Output Combinational Circuits; 4.5 Typical Combinational Circuits; 4.5.1 Binary / BCD Adders and Binary Subtractors; 4.5.2 Comparators; 4.5.3 Decoders; 4.5.4 Encoders; 4.5.5 Multiplexers; 4.5.6 Demultiplexers
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5.9 Design of Synchronous Sequential Circuits

Sommario/riassunto

Fundamentals of Digital Logic and Microcomputer Design, has long been hailed for its clear and simple presentation of the principles and basic tools required to design typical digital systems such as microcomputers. In this Fifth Edition, the author focuses on computer design at three levels: the device level, the logic level, and the system level. Basic topics are covered, such as number systems and Boolean algebra, combinational and sequential logic design, as well as more advanced subjects such as assembly language programming and microprocessor-based system design. Numerous examples