M. Rafiquzzaman

DESCRIPTION

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 are provided throughout the text.

Coverage includes:

- Digital circuits at the gate and flip-flop levels
- Analysis and design of combinational and sequential circuits
- Microcomputer organization, architecture, and programming concepts
- Design of computer instruction sets, CPU, memory, and I/O
- System design features associated with popular microprocessors from Intel and Motorola
- Future plans in microprocessor development
• An instructor’s manual, available upon request

Additionally, the accompanying CD-ROM, contains step-by-step procedures for installing and using Altera Quartus II software, MASM 6.11 (8086), and 68asmsim (68000), provides valuable simulation results via screen shots.

Fundamentals of Digital Logic and Microcomputer Design is an essential reference that will provide you with the fundamental tools you need to design typical digital systems.

ABOUT THE AUTHOR

M. RAFIQUZZAMAN, PHD, is Professor of Electrical and Computer Engineering at California State Polytechnic University in Pomona. He is also the founder of Rafi Systems, Inc., a manufacturer of biomedical devices and a computer systems consulting firm in California. Recognized for his numerous books on microprocessors, which have been translated into Russian, Chinese, and Spanish, Dr. Rafiquzzaman is an advisor to the U.S. House Policy Committee’s Technology Board, assisting members of Congress in developing and promoting technology in both public and private sectors.

NEW TO EDITION

While most texts either focus on computer design or digital logic and digital systems, this book includes both areas, making it a unique addition to existing literature.

The author has an extensive background in computers and has published numerous books on the subject. He is undoubtedly one of the leading authorities in this field.

This book covers simple topics, such as number system and Boolean algebra, to advanced topics, such as assembly language programming and microprocessor-based system design.

The accompanying CD contains a step by step procedure for installing and using Altera Quartus II software for synthesizing Verilog and VHDL descriptions. Screen shots of the waveforms and tabular forms illustrating the simulation results are also provided in the CD.
The CD also contains a step by step procedure for installing and using MASM 6.11 (8086) and 68asmsim (68000). Screen shots verifying correct operations of several assembly language programs via simulation using test data are also provided in the CD.

FEATURES

Fundamentals of Digital Logic & Microcomputer Design, a leading computer science / engineering text for undergraduate and introductory graduate courses, 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 are provided.

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• An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

For additional product details, please visit https://www.wiley.com/en-us