

Electrotechnology 23 July 2014 N3 Question Paper

Engineering Electromagnetics Building Performance Analysis Nuclear Medicine Physics The SAGE Handbook of Management Learning, Education and Development Sensors and Actuators in Smart Cities Solar Energy Emerging Trends in Computing and Communication Proceedings of 3rd International Conference on Advanced Computing, Networking and Informatics Strategies for Teaching Fractions Permanent Magnet Synchronous Machines Advances in Computer Science for Engineering and Education II Dictionary Catalog of the Research Libraries of the New York Public Library, 1911-1971 Intelligent Computing Techniques for Smart Energy Systems Power Plant Engineering Internet of Things From Hype to Reality Mathematics for Computer Science Lessons in Industrial Instrumentation 1/3 Software-Defined Radio for Engineers Marketing Communications Industry Fin FETs and Other Multi-Gate Transistors Optimization in Control Applications Researching Interactive Communication Behavior Introduction To Algorithms Window Functions and Their Applications in Signal Processing IEEE Guide for the Application of Metal-oxide Surge Arresters for Alternating-current Systems Scientific Computing in Electrical Engineering Introduction to Applied Linear Algebra Power System Analysis and Design Applied Statistics and Probability for Engineers Probability and Stochastic Processes Standard Handbook of Machine Design Fourth International Congress on Information and Communication Technology A First Course in the Finite Element Method High Voltage Engineering Fundamentals of Ultra-Thin-Body MOSFETs and FinFETs Introduction to Machine Learning Practical Reliability Engineering Never Eat Alone Neural Approaches to Dynamics of Signal Exchanges Cryptography and Network Security

Engineering Electromagnetics

Based on the popular Artech House classic, Digital Communication Systems Engineering with Software-Defined Radio, this book provides a practical approach to quickly learning the software-defined radio (SDR) concepts needed for work in the field. This up-to-date volume guides readers on how to quickly prototype wireless designs using SDR for real-world testing and experimentation. This book explores advanced wireless communication techniques such as OFDM, LTE, WLA, and hardware targeting. Readers will gain an understanding of the core concepts behind wireless hardware, such as the radio frequency front-end, analog-to-digital and digital-to-analog converters, as well as various processing technologies. Moreover, this volume includes chapters on timing estimation, matched filtering, frame synchronization message decoding, and source coding. The orthogonal frequency division multiplexing is explained and details about HDL code generation and deployment are provided. The book concludes with coverage of the WLAN toolbox with OFDM beacon reception and the LTE toolbox with downlink reception. Multiple case studies are provided throughout the book. Both MATLAB and Simulink source code are included to assist readers with their projects in the field.

Building Performance Analysis

FinFETs and Other Multi-Gate Transistors provides a comprehensive description of the physics, technology and circuit applications of multigate field-effect transistors (FETs). It explains the physics and properties of these devices, how they are fabricated and how circuit designers can use them to improve the performances of integrated circuits. The International Technology Roadmap for Semiconductors (ITRS) recognizes the importance of these devices and places them in the "Advanced non-classical CMOS devices" category. Of all the existing multigate devices, the FinFET is the most widely known. FinFETs and Other Multi-Gate Transistors is dedicated to the different facets of multigate FET technology and is written by leading experts in the field.

Nuclear Medicine Physics

The application of metal-oxide surge arresters to safeguard electric power equipment against the hazards of abnormally high voltage surges of various origins is covered. Step-by-step directions toward proper solutions of various applications are provided. In many cases, the prescribed steps are adequate. More complex and special solutions requiring study by experienced engineers are described, but specific solutions are not always given. The procedures are based on theoretical studies, test results, and experience.

The SAGE Handbook of Management Learning, Education and Development

The goal of machine learning is to program computers to use example data or past experience to solve a given problem. Many successful applications of machine learning exist already, including systems that analyze past sales data to predict customer behavior, optimize robot behavior so that a task can be completed using minimum resources, and extract knowledge from bioinformatics data. Introduction to Machine Learning is a comprehensive textbook on the subject, covering a broad array of topics not usually included in introductory machine learning texts. Subjects include supervised learning; Bayesian decision theory; parametric, semi-parametric, and nonparametric methods; multivariate analysis; hidden Markov models; reinforcement learning; kernel machines; graphical models; Bayesian estimation; and statistical testing. Machine learning is rapidly becoming a skill that computer science students must master before graduation. The third edition of Introduction to Machine Learning reflects this shift, with added support for beginners, including selected solutions for exercises and additional example data sets (with code available online). Other substantial changes include discussions of outlier detection; ranking algorithms for perceptrons and support vector machines; matrix decomposition and spectral methods; distance estimation; new kernel algorithms; deep learning in multilayered perceptrons; and the nonparametric approach to Bayesian methods. All learning algorithms are explained so that students can easily move from the equations

in the book to a computer program. The book can be used by both advanced undergraduates and graduate students. It will also be of interest to professionals who are concerned with the application of machine learning methods.

Sensors and Actuators in Smart Cities

Advanced Computing, Networking and Informatics are three distinct and mutually exclusive disciplines of knowledge with no apparent sharing/overlap among them. However, their convergence is observed in many real world applications, including cyber-security, internet banking, healthcare, sensor networks, cognitive radio, pervasive computing amidst many others. This two volume proceedings explore the combined use of Advanced Computing and Informatics in the next generation wireless networks and security, signal and image processing, ontology and human-computer interfaces (HCI). The two volumes together include 132 scholarly articles, which have been accepted for presentation from over 550 submissions in the Third International Conference on Advanced Computing, Networking and Informatics, 2015, held in Bhubaneswar, India during June 23-25, 2015.

Solar Energy

The latest ideas in machine analysis and design have led to a major revision of the field's leading handbook. New chapters cover ergonomics, safety, and computer-aided design, with revised information on numerical methods, belt devices, statistics, standards, and codes and regulations. Key features include: *new material on ergonomics, safety, and computer-aided design; *practical reference data that helps machines designers solve common problems--with a minimum of theory. *current CAS/CAM applications, other machine computational aids, and robotic applications in machine design. This definitive machine design handbook for product designers, project engineers, design engineers, and manufacturing engineers covers every aspect of machine construction and operations. Voluminous and heavily illustrated, it discusses standards, codes and regulations; wear; solid materials, seals; flywheels; power screws; threaded fasteners; springs; lubrication; gaskets; coupling; belt drive; gears; shafting; vibration and control; linkage; and corrosion.

Emerging Trends in Computing and Communication

The second volume of this book includes selected high-quality research papers presented at the Fourth International Congress on Information and Communication Technology, which was held at Brunel University, London, on February 27-28, 2019. It discusses emerging topics pertaining to information and communication technology (ICT) for managerial applications, e-governance, e-agriculture, e-education and computing technologies, the Internet of Things (IoT), and e-mining. Written by respected experts and researchers actively working in ICT, the book offers a valuable resource,

especially for researchers who are newcomers to the field.

Proceedings of 3rd International Conference on Advanced Computing, Networking and Informatics

Provides a comprehensive treatment of high voltage engineering fundamentals at the introductory and intermediate levels. It covers: techniques used for generation and measurement of high direct, alternating and surge voltages for general application in industrial testing and selected special examples found in basic research; analytical and numerical calculation of electrostatic fields in simple practical insulation system; basic ionisation and decay processes in gases and breakdown mechanisms of gaseous, liquid and solid dielectrics; partial discharges and modern discharge detectors; and overvoltages and insulation coordination.

Strategies for Teaching Fractions

This publication provides the basis for the education of medical physicists initiating their university studies in the field of nuclear medicine. The handbook includes 20 chapters and covers topics relevant to nuclear medicine physics, including basic physics for nuclear medicine, radionuclide production, imaging and non-imaging detectors, quantitative nuclear medicine, internal dosimetry in clinical practice and radionuclide therapy. It provides, in the form of a syllabus, a comprehensive overview of the basic medical physics knowledge required for the practice of medical physics in modern nuclear medicine.

Permanent Magnet Synchronous Machines

Advances in Computer Science for Engineering and Education II

Dictionary Catalog of the Research Libraries of the New York Public Library, 1911-1971

The new edition of POWER SYSTEM ANALYSIS AND DESIGN provides students with an introduction to the basic concepts of power systems along with tools to aid them in applying these skills to real world situations. Physical concepts are highlighted while also giving necessary attention to mathematical techniques. Both theory and modeling are developed from simple beginnings so that they can be readily extended to new and complex situations. The authors incorporate new

tools and material to aid students with design issues and reflect recent trends in the field. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Intelligent Computing Techniques for Smart Energy Systems

Power Plant Engineering

A networking expert explains how to use the power of relationships for mutually beneficial results, outlining specific strategies and principles for generosity-based networking with colleagues, friends and associates.

Internet of Things From Hype to Reality

Marketing Communications Industry: Entrepreneurial Case Studies explores the innovative management practices adopted by some enterprising individuals that fostered creation and growth of new business formations without any support from large corporate houses. These new businesses were both competitive and based on application of ethical and innovative management tools. The book is a collation of analytical case studies about these new and emerging class of entrepreneurs and enterprises from diverse fields such as marketing research, public relations and event management, to name a few. The authors lay down both the theoretical and practical aspects of the desired management practices. This book will be of interest to professionals involved in communication and entrepreneurship management, and branding, PR consultants, corporates, entrepreneurs and readers of business history. It is a must read for students and faculties of management schools.

Mathematics for Computer Science

The scholarship of management teaching and learning has established itself as a field in its own right and this benchmark handbook is the first to provide an account of the discipline. Original chapters from leading international academics identify the key issues and map out where the discipline is going. Each chapter provides a comprehensive and critical overview of the given topic area, highlights current debates and reviews the emerging research agenda. Chapters embrace the study of organizations as a whole, the concepts of individual and collective learning, the delivery of formal management education and the facilitation of management development. Through consideration of these themes the Handbook analyzes, promotes and critiques the contribution of management learning, education and development to management understanding. It will be an invaluable point of reference for all students and researchers interested in broadening their understanding of this

exciting and dynamic new field.

Lessons in Industrial Instrumentation 1/3

Any way you slice it, fractions are foundational. Many students struggle with fractions and must understand them before learning higher-level math. Veteran educator David B. Spangler describes powerful diagnostic methods for error analysis that pinpoint specific student misconceptions and supplies specific intervention strategies and activities for each error pattern. Aligned with NCTM and Common Core State Standards, the research-based, targeted interventions for each error pattern promoted teaching for conceptual understanding. Practical materials include: Reproducibles for diagnostic tests Practice pages for exercises keyed to the diagnostic tests and error patterns Teacher resources for hands-on activities, game sheets and pieces, and more

Software-Defined Radio for Engineers

This classic textbook/reference contains a complete integration of the processes which influence quality and reliability in product specification, design, test, manufacture and support. Provides a step-by-step explanation of proven techniques for the development and production of reliable engineering equipment as well as details of the highly regarded work of Taguchi and Shainin. New to this edition: over 75 pages of self-assessment questions plus a revised bibliography and references. The book fulfills the requirements of the qualifying examinations in reliability engineering of the Institute of Quality Assurance, UK and the American Society of Quality Control.

Marketing Communications Industry

Interest in permanent magnet synchronous machines (PMSMs) is continuously increasing worldwide, especially with the increased use of renewable energy and the electrification of transports. This book contains the successful submissions of fifteen papers to a Special Issue of Energies on the subject area of "Permanent Magnet Synchronous Machines". The focus is on permanent magnet synchronous machines and the electrical systems they are connected to. The presented work represents a wide range of areas. Studies of control systems, both for permanent magnet synchronous machines and for brushless DC motors, are presented and experimentally verified. Design studies of generators for wind power, wave power and hydro power are presented. Finite element method simulations and analytical design methods are used. The presented studies represent several of the different research fields on permanent magnet machines and electric drives.

FinFETs and Other Multi-Gate Transistors

This book comprehensively describes an end-to-end Internet of Things (IoT) architecture that is comprised of devices, network, compute, storage, platform, applications along with management and security components. It is organized into five main parts, comprising of a total of 11 chapters. Part I presents a generic IoT reference model to establish a common vocabulary for IoT solutions. This includes a detailed description of the Internet protocol layers and the Things (sensors and actuators) as well as the key business drivers to realize the IoT vision. Part II focuses on the IoT requirements that impact networking protocols and provides a layer-by-layer walkthrough of the protocol stack with emphasis on industry progress and key gaps. Part III introduces the concept of Fog computing and describes the drivers for the technology, its constituent elements, and how it relates and differs from Cloud computing. Part IV discusses the IoT services platform, the cornerstone of the solution followed by the Security functions and requirements. Finally, Part V provides a treatment of the topic of connected ecosystems in IoT along with practical applications. It then surveys the latest IoT standards and discusses the pivotal role of open source in IoT. “Faculty will find well-crafted questions and answers at the end of each chapter, suitable for review and in classroom discussion topics. In addition, the material in the book can be used by engineers and technical leaders looking to gain a deep technical understanding of IoT, as well as by managers and business leaders looking to gain a competitive edge and understand innovation opportunities for the future.” Dr. Jim Spohrer, IBM “This text provides a very compelling study of the IoT space and achieves a very good balance between engineering/technology focus and business context. As such, it is highly-recommended for anyone interested in this rapidly-expanding field and will have broad appeal to a wide cross-section of readers, i.e., including engineering professionals, business analysts, university students, and professors.” Professor Nasir Ghani, University of South Florida

Optimization in Control Applications

Understand the theory, design and applications of the two principal candidates for the next mainstream semiconductor-industry device with this concise and clear guide to FD/UTB transistors. • Describes FD/SOI MOSFETs and 3-D FinFETs in detail • Covers short-channel effects, quantum-mechanical effects, applications of UTB devices to floating-body DRAM and conventional SRAM • Provides design criteria for nanoscale FinFET and nanoscale thin- and thick-BOX planar FD/SOI MOSFET to help reduce technology development time • Projects potential nanoscale UTB CMOS performances • Contains end-of-chapter exercises. For professional engineers in the CMOS IC field who need to know about optimal non-classical device design and integration, this is a must-have resource.

Researching Interactive Communication Behavior

Window functions—otherwise known as weighting functions, tapering functions, or apodization functions—are mathematical functions that are zero-valued outside the chosen interval. They are well established as a vital part of digital signal

processing. Window Functions and their Applications in Signal Processing presents an exhaustive and detailed account of window functions and their applications in signal processing, focusing on the areas of digital spectral analysis, design of FIR filters, pulse compression radar, and speech signal processing. Comprehensively reviewing previous research and recent developments, this book: Provides suggestions on how to choose a window function for particular applications Discusses Fourier analysis techniques and pitfalls in the computation of the DFT Introduces window functions in the continuous-time and discrete-time domains Considers two implementation strategies of window functions in the time- and frequency domain Explores well-known applications of window functions in the fields of radar, sonar, biomedical signal analysis, audio processing, and synthetic aperture radar

Introduction To Algorithms

The book presents papers delivered by researchers, industrial experts and academicians at the Conference on Emerging Trends in Computing and Communication (ETCC 2014). As such, the book is a collection of recent and innovative works in the field Network Security and Cryptography, Cloud Computing and Big Data Analytics, Data Mining and Data Warehouse, Communication and Nanotechnology and VLSI and Image Processing.

Window Functions and Their Applications in Signal Processing

This Text-Cum-Reference Book Has Been Written To Meet The Manifold Requirement And Achievement Of The Students And Researchers. The Objective Of This Book Is To Discuss, Analyses And Design The Various Power Plant Systems Serving The Society At Present And Will Serve In Coming Decades India In Particular And The World In General. The Issues Related To Energy With Stress And Environment Up To Some Extent And Finally Find Ways To Implement The Outcome. Salient Features# Utilization Of Non-Conventional Energy Resources# Includes Green House Effect# Gives Latest Information S In Power Plant Engineering# Include Large Number Of Problems Of Both Indian And Foreign Universities# Rich Contents, Lucid Manner

IEEE Guide for the Application of Metal-oxide Surge Arresters for Alternating-current Systems

Researching Interactive Communication Behavior by C. Arthur VanLear and Daniel J. Canary provides students and experienced researchers with tools for studying communication behaviors through direct observation. The sourcebook provides sound coverage of both cutting-edge and well-established systems, measurements, and procedures, as well as detailed information on measurement selection, coding, reliability assessment, and analysis. In addition to offering theoretical discussions, each chapter also focuses on how to apply systems and principles in conducting actual original

research and uses examples and exemplars to help readers understand and apply the methods.

Scientific Computing in Electrical Engineering

A groundbreaking introduction to vectors, matrices, and least squares for engineering applications, offering a wealth of practical examples.

Introduction to Applied Linear Algebra

The book compiles the research works related to smart solutions concept in context to smart energy systems, maintaining electrical grid discipline and resiliency, computational collective intelligence consisted of interaction between smart devices, smart environments and smart interactions, as well as information technology support for such areas. It includes high-quality papers presented in the International Conference on Intelligent Computing Techniques for Smart Energy Systems organized by Manipal University Jaipur. This book will motivate scholars to work in these areas. The book also prophesies their approach to be used for the business and the humanitarian technology development as research proposal to various government organizations for funding approval.

Power System Analysis and Design

An extensively revised edition of a mathematically rigorous yet accessible introduction to algorithms.

Applied Statistics and Probability for Engineers

This book is a printed edition of the Special Issue "Sensors and Actuators in Smart Cities" that was published in JSAN

Probability and Stochastic Processes

The book presents research that contributes to the development of intelligent dialog systems to simplify diverse aspects of everyday life, such as medical diagnosis and entertainment. Covering major thematic areas: machine learning and artificial neural networks; algorithms and models; and social and biometric data for applications in human-computer interfaces, it discusses processing of audio-visual signals for the detection of user-perceived states, the latest scientific discoveries in processing verbal (lexicon, syntax, and pragmatics), auditory (voice, intonation, vocal expressions) and visual signals (gestures, body language, facial expressions), as well as algorithms for detecting communication disorders, remote health-

status monitoring, sentiment and affect analysis, social behaviors and engagement. Further, it examines neural and machine learning algorithms for the implementation of advanced telecommunication systems, communication with people with special needs, emotion modulation by computer contents, advanced sensors for tracking changes in real-life and automatic systems, as well as the development of advanced human-computer interfaces. The book does not focus on solving a particular problem, but instead describes the results of research that has positive effects in different fields and applications.

Standard Handbook of Machine Design

A FIRST COURSE IN THE FINITE ELEMENT METHOD provides a simple, basic approach to the course material that can be understood by both undergraduate and graduate students without the usual prerequisites (i.e. structural analysis). The book is written primarily as a basic learning tool for the undergraduate student in civil and mechanical engineering whose main interest is in stress analysis and heat transfer. The text is geared toward those who want to apply the finite element method as a tool to solve practical physical problems. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Fourth International Congress on Information and Communication Technology

This book is a printed edition of the Special Issue "Optimization in Control Applications" that was published in MCA

A First Course in the Finite Element Method

This book covers elementary discrete mathematics for computer science and engineering. It emphasizes mathematical definitions and proofs as well as applicable methods. Topics include formal logic notation, proof methods; induction, well-ordering; sets, relations; elementary graph theory; integer congruences; asymptotic notation and growth of functions; permutations and combinations, counting principles; discrete probability. Further selected topics may also be covered, such as recursive definition and structural induction; state machines and invariants; recurrences; generating functions.

High Voltage Engineering

Fundamentals of Ultra-Thin-Body MOSFETs and FinFETs

This text introduces engineering students to probability theory and stochastic processes. Along with thorough mathematical development of the subject, the book presents intuitive explanations of key points in order to give students the insights they need to apply math to practical engineering problems. The first seven chapters contain the core material that is essential to any introductory course. In one-semester undergraduate courses, instructors can select material from the remaining chapters to meet their individual goals. Graduate courses can cover all chapters in one semester.

Introduction to Machine Learning

Explores and brings together the existent body of knowledge on building performance analysis Building performance is an important yet surprisingly complex concept. This book presents a comprehensive and systematic overview of the subject. It provides a working definition of building performance, and an in-depth discussion of the role building performance plays throughout the building life cycle. The book also explores the perspectives of various stakeholders, the functions of buildings, performance requirements, performance quantification (both predicted and measured), criteria for success, and the challenges of using performance analysis in practice. Building Performance Analysis starts by introducing the subject of building performance: its key terms, definitions, history, and challenges. It then develops a theoretical foundation for the subject, explores the complexity of performance assessment, and the way that performance analysis impacts on actual buildings. In doing so, it attempts to answer the following questions: What is building performance? How can building performance be measured and analyzed? How does the analysis of building performance guide the improvement of buildings? And what can the building domain learn from the way performance is handled in other disciplines? Assembles the current body of knowledge on building performance analysis in one unique resource Offers deep insights into the complexity of using building performance analysis throughout the entire building life cycle, including design, operation and management Contributes an emergent theory of building performance and its analysis Building Performance Analysis will appeal to the building science community, both from industry and academia. It specifically targets advanced students in architectural engineering, building services design, building performance simulation and similar fields who hold an interest in ensuring that buildings meet the needs of their stakeholders.

Practical Reliability Engineering

This comprehensive textbook takes you through everything you need to know about solar energy from the physics of photovoltaic (PV) cells through to the design of PV systems for real-life applications. Solar Energy is an invaluable reference for researchers, industrial engineers and designers working in solar energy generation. The book is also ideal for university and third-level physics or engineering courses on solar photovoltaics, with exercises to check students' understanding and reinforce learning. It is the perfect companion to the Massive Open Online Course (MOOC) on Solar Energy (DelftX,

ET.3034TU) presented by co-author Arno Smets. The course is available in English on the nonprofit open source edX.org platform, and in Arabic on edraak.org. Over 100,000 students have already registered for these MOOCs.

Never Eat Alone

This book gathers high-quality, peer-reviewed research papers presented at the Second International Conference on Computer Science, Engineering and Education Applications (ICCSEEA2019), held in Kiev, Ukraine on 26–27 January 2019, and jointly organized by the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” and the International Research Association of Modern Education and Computer Science. The papers discuss state-of-the-art topics and advances in computer science; neural networks; pattern recognition; engineering techniques; genetic coding systems; deep learning and its medical applications; and knowledge representation and its applications in education. Given its scope, the book offers an excellent resource for researchers, engineers, management practitioners, and graduate and undergraduate students interested in computer science and its applications in engineering and education.

Neural Approaches to Dynamics of Signal Exchanges

Everything you can learn about the practical automation at one place.

Cryptography and Network Security

This book is a collection of selected papers presented at the 10th International Conference on Scientific Computing in Electrical Engineering (SCEE), held in Wuppertal, Germany in 2014. The book is divided into five parts, reflecting the main directions of SCEE 2014: 1. Device Modeling, Electric Circuits and Simulation, 2. Computational Electromagnetics, 3. Coupled Problems, 4. Model Order Reduction, and 5. Uncertainty Quantification. Each part starts with a general introduction followed by the actual papers. The aim of the SCEE 2014 conference was to bring together scientists from academia and industry, mathematicians, electrical engineers, computer scientists, and physicists, with the goal of fostering intensive discussions on industrially relevant mathematical problems, with an emphasis on the modeling and numerical simulation of electronic circuits and devices, electromagnetic fields, and coupled problems. The methodological focus was on model order reduction and uncertainty quantification. this book="" will="" appeal="" to="" mathematicians="" and="" electrical="" engineers="" it="" offers="" a="" valuable="" starting="" point="" for="" developers="" of="" algorithms="" programs="" who="" want="" learn="" about="" recent="" advances="" in="" other="" fields="" as="" well="" open="" problems="" coming="" from="" industry="" moreover,="" be="" use="" representatives="" industry="" with="" an="" interest="" new="" program="" tools="" mathematical="" methods.

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