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 Electromechanical Motion Devices
 Theory and Investigation Methods of Currents and Losses in Stator and Rotor Meshes Including Operation with Nonlinear Loads
 From Electromagnetics to Power Systems
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Electric Circuits Springer Science & Business Media

Passive Circuit Components and Electron Ballistics
 Passive circuit components : Resistors : Fixed and variable - Tolerance - Colour coding ; Capacitors : Fixed and variable - Dissipation factor - Characteristics and applications of various types of capacitors; Inductors : Fixed and variable - Energy stored in a magnetic field - Q factor - Mutual coupled coils.
 Electron ballistics : Charged particles - Force, Field intensity, potential and energy - Two dimensional motion of electron - Force in magnetic field - Motion in a magnetic field - Parallel and perpendicular electric and magnetic fields - Electrostatic deflection and Magnetic deflection in a Cathode Ray Tube - Principles and applications of CRO.
 Semiconductor Diodes and Special Diodes
 Semiconductor diodes : Classification of semiconductors - Conductivity of semiconductors - Carrier concentration in intrinsic semiconductor - Mass - Action law - Properties of intrinsic semiconductors - Variation in semiconductor parameters with temperature - Drift and diffusion currents - Carrier life time - Continuity equation - Theory of PN junction diode - Energy band structure of open circuited PN junction - Quantitative theory of PN diode currents - Diode current equation - Diode resistance - Transition or space charge capacitance - Diffusion capacitance - Effect of temperature of PN junction diodes - Junction diode switching characteristics - Breakdown in PN junction diodes - PN diode applications - Clipper - Clampers.
 Special

diodes : Zener diode - Backward diode - Varactor diode - Step recovery diode - Point-contact diode - Tunnel diode - PIN diodes - Laser diode ; Photoconductive sensors - Photovoltaic sensors - Photoemissive sensors - Light emitters - Liquid Crystal Display (LCD) - Nixie tube - Alphanumeric displays - Optocoupler.
 Bipolar Junction Transistors and Field Effect Transistors
 Bipolar Junction Transistors : Construction - Transistor biasing - Operation of NPN transistor - Operation of PNP transistor - Types of configuration - Breakdown in transistors - Ebers-Moll model - Transistor switching times.
 Field Effect Transistors : Construction of N-channel JFET - Operation of N-channel JFET - Characteristic Parameters of the JFET - Expression for saturation drain current - Slope of the transfer characteristics at IDSS - Comparison of JFET and BJT - Applications of JFET - Metal oxide semiconductor field effect transistor (MOSFET) - Enhancement MOSFET - Depletion MOSFET - Comparison of MOSFET with JFET - Handling precautions for MOSFET - Comparison of N-with P-channel MOSFETs - Comparison of N-with P-Channel.
 Integrated Circuit Fabrication
 Introduction to mass technology - Manufacturing process - Construction of a bipolar transistor - Monolithic diodes - Integrated resistors - Monolithic capacitors - Inductors - Thin and thick film technology - Definition of LSI, MSI, VLSI circuits - VLSI Design rules and layout technique - Introduction to fast VLSI circuits.
 Metal Semiconductor Contacts and Power Control Devices
 Metal semiconductor contacts : Energy band diagram of metal semiconductor junction - Schottky diode and ohmic contacts - GTO.
 Power control devices : PNP diode (Shockley diode) - SCR - Thyristor ratings - LASCR (Light Activated SCR) - TRIAC - DIAC - Characteristics and equivalent circuit of UJT - Intrinsic stand-off ratio.
Electric Circuit Analysis John Wiley & Sons

This study guide is designed for students taking courses in electrical circuit analysis. The textbook includes examples, questions, and exercises that will help electrical engineering students to review and sharpen their knowledge of the subject and enhance their performance in the classroom. Offering detailed solutions, multiple methods for solving problems, and clear explanations of concepts, this hands-on guide will improve student's problem-solving skills and basic understanding of the topics covered in electric circuit analysis courses. Exercises cover a wide selection of basic and advanced questions and problems. Categorizes and orders the problems based on difficulty level, hence suitable for both knowledgeable and under-prepared students. Provides detailed and instructor-recommended solutions and methods, along with clear explanations. Can be used along with the core textbooks in AC circuit analysis and advanced electrical circuit analysis.

Network Analysis and Practice Routledge

This comprehensive text on Network Analysis and Synthesis is designed for undergraduate students of Electronics and Communication Engineering, Electrical and Electronics Engineering, Electronics and Instrumentation Engineering, Electronics and Computer Engineering and Biomedical Engineering. The book will also be useful to AMIE and IETE students. Written with student-centered, pedagogically driven approach, the text provides a self-centered introduction to the theory of network analysis and synthesis. Striking a balance between theory and practice, it covers topics ranging from circuit elements and Kirchhoff's laws, network theorems, loop and node analysis of dc and ac circuits, resonance, transients, coupled circuits, three-phase circuits, graph theory, Fourier and Laplace analysis, Filters, attenuators and equalizers to network synthesis. All the solved and unsolved problems in this book are designed to illustrate the topics in a clear way. **KEY FEATURES** □ Numerous worked-out examples in each chapter. □ Short questions with answers help students to prepare for examinations. □ Objective type questions, Fill in the blanks, Review questions and Unsolved problems at the end of each chapter to test the level of understanding of the subject. □ Additional examples are available at:

www.phindia.com/anand_kumar_network_analysis

Electric Circuits and Networks John Wiley & Sons

The study of circuits is the foundation on which most other courses in the electrical engineering curriculum are based. For this reason the first course in circuit analysis must be appropriate to the succeeding specializations, which may be classified into two groups. One is a specialization in electronics, microelectronics, communications, computers etc. , or so-called low current, low-voltage engineering. The other is in power electronics, power systems, energy conversion devices etc. , or so-called high-current, high voltage engineering. It is evident that although there are many common teaching topics in the basic course of circuit analysis, there are also certain differences. Unfortunately most of the textbooks in this field are written from the 'electronic engineer's viewpoint', i. e. with the emphasis on low current systems. This brought the author to the conclusion that there is a definite disadvantage in not having a more appropriate book for the specializations in high-current, high-voltage engineering. Thus the idea for this book came into being. The major feature distinguishing this book from others on circuit analysis is in delivering the material with a very strong connection to the specializations in the field of power systems, i. e. in high-current and high voltage engineering. The author believes that this emphasis gives the reader more opportunity for a better understanding and practice of the material which is relevant for power system network analysis, and to prepare students for their further specializations.

Circuit Analysis with PSpice CRC Press

This textbook for a one-semester course in Electrical Circuit Theory is written to be concise, understandable, and applicable. Matlab is used throughout, for coding the programs and simulation of the circuits. Every new concept is illustrated with numerous examples and figures, in order to facilitate learning. The simple and clear style of presentation, along with comprehensive coverage, enables students to gain a solid foundation in the subject, along with the ability to apply techniques to real circuit analysis. Written to be accessible to students of varying backgrounds, this textbook presents the analysis of realistic, working circuits. Presents concepts in a clear, concise and comprehensive manner, such as the difficult problem of setting up the equilibrium equations of circuits using a systematic approach in a few distinct steps. Includes worked examples of functioning circuits, throughout every chapter, with an emphasis on real applications. Includes numerous exercises at the end of each chapter. Provides program scripts and circuit simulations, using the popular and widely used Matlab software, as supplementary material online.

Resonance in Magnetically Coupled, Tuned Circuits John Wiley & Sons

Designed for use in a one or two-semester Introductory Circuit Analysis or Circuit Theory Courses taught in Electrical or Computer Engineering Departments. The most widely used introductory circuits textbook. Emphasis is on student and instructor assessment and the teaching philosophies remain: - To build an understanding of concepts and ideas explicitly in terms of previous learning - To emphasize the relationship between conceptual understanding and problem solving approaches - To provide students with a strong foundation of engineering practices.

Electric Circuits Springer Nature

This book presents the subject matter in a clear and concise manner with numerous diagrams and examples.

Solved Problems for Transient Electrical Circuits Springer Nature

Electric Circuit Analysis Pearson Education India

Power System Fundamentals Pearson Education India

Now readers can master the fundamentals of electric circuits with Kang's ELECTRIC CIRCUITS. Readers learn the basics of electric circuits with common design practices and simulations as the book presents clear step-by-step examples, practical exercises, and problems. Each chapter includes several examples and problems related to circuit design, with answers for odd-numbered questions so learners can further prepare themselves with self-guided study and practice. ELECTRIC CIRCUITS covers everything from DC circuits and AC circuits to Laplace transformed circuits. MATLAB scripts for certain examples give readers an alternate method to solve circuit problems, check answers, and reduce laborious derivations and calculations.

This edition also provides PSpice and Simulink examples to demonstrate electric circuit simulations. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Electric Circuit Analysis Springer Science & Business Media

Borne out of twentieth-century science and technology, the field of RF (radio frequency) linear accelerators has made significant contributions to basic

research, energy, medicine, and national defense. As we advance into the twenty-first century, the linac field has been undergoing rapid development as the demand for its many applications, emphasizing high-energy, high-intensity, and high-brightness output beams, continues to grow. RF Linear Accelerators is a textbook that is based on a US Particle Accelerator School graduate-level course that fills the need for a single introductory source on linear accelerators. The text provides the scientific principles and up-to-date technological aspects for both electron and ion linacs. This second edition has been completely revised and expanded to include examples of modern RF linacs, special linacs and special techniques as well as superconducting linacs. In addition, problem sets at the end of each chapter supplement the material covered. The book serves as a must-have reference for professionals interested in beam physics and accelerator technology.

AC Electrical Circuit Analysis Routledge

An Introduction to Electrical Science walks readers through the subject in a logical order, providing a historical overview alongside modern electrical theory and practice. Perfect for electrical trainees both during their training and once qualified. You will be guided through the subject in a topic by topic manner with each section building upon the one that came before it. By adding context to the principles of electrical science the topics become easier to both understand and remember, providing a grounding in the subject that will remain with you for life. With a wealth of examples, images and diagrams mastering difficult concepts will be a breeze. This book also has a companion site with an extra chapter, interactive multiple choice quizzes for each chapter and more at www.www.routledge.com/cw/waygood. Fully aligned to the 17th edition of the wiring regulations. Free access to companion website material, including multiple-choice tests and extra chapters. Two-colour layout helps navigation and highlights key points. Visit the companion website at www.routledge.com/cw/waygood.

Electric Oscillations and Electric Waves Pearson Education India

This is the only book on the market that has been conceived and deliberately written as a one-semester text on basic electric circuit theory. As such, this book employs a novel approach to the exposition of the material in which phasors and ac steady-state analysis are introduced at the beginning. This allows one to use phasors in the discussion of transients excited by ac sources, which makes the presentation of transients more comprehensive and meaningful. Furthermore, the machinery of phasors paves the road to the introduction of transfer functions, which are then used in the analysis of transients and the discussion of Bode plots and filters. Another salient feature of the text is the consolidation into one chapter of the material concerned with dependent sources and operational amplifiers. Dependent sources are introduced as linear models for transistors on the basis of small signal analysis. In the text, PSpice simulations are prominently featured to reinforce the basic material and understanding of circuit analysis. **Key Features** * Designed as a comprehensive one-semester text in basic circuit theory * Features early introduction of phasors and ac steady-state analysis * Covers the application of phasors and ac steady-state analysis * Consolidates the material on dependent sources and operational amplifiers * Places emphasis on connections between circuit theory and other areas in electrical engineering * Includes PSpice tutorials and examples * Introduces the design of active filters * Includes problems at the end of every chapter * Priced well below similar books designed for year-long courses.

Official Gazette of the United States Patent Office Macmillan International Higher Education

Smart grids are linked with smart homes and smart meters. These smart grids are the new topology for generating, distributing, and consuming energy. If these smart devices are not connected in a smart grid, then they cannot work properly; hence, the conventional power systems are swiftly changing in order to improve the quality of electrical energy. This book covers the fundamentals of power systems—which are the pillars for smart grids—with a focus on defining the smart grid with theoretical and experimental electrical concepts. Power System Fundamentals begins by discussing electric circuits, the basic systems in smart grids, and finishes with a complete smart grid concept. The book allows the reader to build a foundation of understanding with basic and advanced exercises that run on simulation before moving to experimental results. It is intended for readers who want to comprehensively cover both the basic and advanced concepts of smart grids.

NETWORK ANALYSIS AND SYNTHESIS Tata McGraw-Hill Education

Electric circuits, and their electronic circuit extensions, are found in all electrical and electronic equipment; including: household equipment, lighting, heating, air conditioning, control systems in both homes and commercial buildings, computers, consumer electronics, and means of transportation, such as cars, buses, trains, ships, and airplanes. Electric circuit analysis is essential for designing all these systems. Electric circuit analysis is a foundation for all hardware courses taken by students in electrical engineering and allied fields, such as electronics, computer hardware, communications and control systems, and electric power. This book is intended to help students master basic electric circuit analysis, as an essential component of their professional education. Furthermore, the objective of this book is to approach circuit analysis by developing a sound understanding of fundamentals and a problem-solving methodology that encourages critical thinking.

Circuits and Networks Academic Press

Now in its seventh edition, Bird's Electrical Circuit Theory and Technology explains electrical circuit theory and associated technology topics in a straightforward manner, supported by practical engineering examples and applications to ensure that readers can relate theory to practice. The extensive and thorough coverage, containing over 800 worked examples, makes this an excellent text for a range of courses, in particular for Degree and Foundation Degree in electrical principles, circuit theory, telecommunications, and electrical technology. The text includes some essential mathematics revision, together with all the essential electrical and electronic principles for BTEC National and Diploma syllabuses and City & Guilds Technician Certificate and Diploma syllabuses in engineering. This material will be a great revision for those on higher courses. This edition includes several new sections, including glass batteries, climate change, the future of electricity production, and discussions concerning everyday aspects of electricity, such as watts and lumens, electrical safety, AC vs DC, and trending technologies. Its companion website at www.routledge.com/cw/bird provides resources for both students and lecturers, including full solutions for all 1400 further questions, multiple choice questions, lists of essential formulae and bios of famous engineers; as well as full solutions to revision tests, lab experiments, and illustrations for adopting course instructors.

Circuit Systems with MATLAB and PSpice S. Chand Publishing

This textbook serves as a tutorial for engineering students. Fundamental circuit analysis methods are presented at a level accessible to students with minimal background in engineering. The emphasis of the book is on basic concepts, using mathematical equations only as needed. Analogies to

everyday life are used throughout the book in order to make the material easier to understand. Even though this book focuses on the fundamentals, it reveals the authors' deep insight into the relationship between the phasor, Fourier transform, and Laplace transform, and explains to students why these transforms are employed in circuit analysis.

Practice Problems, Methods, and Solutions Routledge

In this monograph the authors solve the modern scientific problems connected with A.C. motors and generators, based first on the detailed consideration of their physical phenomena. The authors describe the theory and investigative methods they developed and applied in practice, which are considered to be of essential interest for specialists in the field of the electrical engineering industry in European countries, the USA, Argentina, and Brazil, as well as in such countries as India, China, and Iran. This book will be of interest to engineers specialized in the field of the manufacture, operation, and repair of A.C. machines (motors and generators) as well as electric drives; to professors, lecturers, and post-graduate students of technical universities, who are specializing in the field of electric machine engineering and electric drives; and to students who are engaged in the field of high current techniques, electric drives, and electric machine engineering.

Electric Circuits Springer Science & Business Media

This book [Electric Circuit Analysis] attempts to provide an exhaustive treatment of the basic foundations and principles of circuit analysis, which should become an integral part of a student's knowledge in his pursuit of the study of further topics in electrical engineering. The topics covered can be handled quite comfortably in two academic semesters. Numerous solved problems are provided to illustrate the concepts. In addition, a large number of exercise problems have been included at the end of each chapter. This revised edition covers some additional topics separately in an

appendix. Further, some revisions and corrections have been incorporated in the text, as per the suggestions given by teachers and students of electrical engineering. The book draws upon three decades of teaching experience of the author in this subject. Students are advised to work out the problems and enhance their learning and knowledge of the subject. The book includes objective type questions to help students prepare for competitive examinations.

Electrical Circuits and Systems Electric Circuit Analysis

This book aims to take undergraduates in science and engineering to an acceptable level of competence in network analysis.

Fundamentals of Electric Power Engineering Technical Publications

This Handbook on circuit analysis is one of the few texts to address the needs of power systems engineers. Unlike many previous books on the subject, which have had an emphasis on low current, this book considers power and high current systems. Consideration is given to both steady state and transient conditions and many examples of power system design are included. The coverage is comprehensive with the first chapters establishing the basics before the author concentrates upon more advanced material. The text gives an in-depth analysis of such areas as magnetically coupled circuits, three phase systems, the non-sinusoidal behaviour of electric circuits and transmission lines. This Handbook will be an invaluable tool for professional engineers in industrial power companies working in the area of power generation and distribution. It is also relevant to postgraduate students and researchers in heavy electrical engineering. Readership: Professional engineers in industrial power companies working on manufacture of equipment and in the electrical supply industry working on power generation and distribution. It is also relevant to postgraduate students and researchers in heavy electrical engineering.

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