

Network Theory By Sudhakar And Shyam Mohan

This book is exclusively designed for the first-year engineering students of Jawaharlal Nehru Technological University, Kakinada studying the 'Network Analysis' course in their second semester. The primary goal of this text is to enable the student have a firm grasp over basic principles of Network Analysis, and develop an understanding of circuits and the ability to design practical circuits that perform the desired operations. Emphasis is placed on basic laws, theorems and techniques which are used to develop a working knowledge of the methods of analysis used most frequently in further topics of electrical engineering. Each chapter begins with principles and theorems together with illustrative and other descriptive material. A large number of solved examples showing students the step-by-step processes for applying the techniques are presented in the text. Several questions in worked examples have been selected from university question papers. As an aid to both the instructor and the student, objective questions and tutorial problems provided at the end of each chapter progress from simple to complex. Answers to selected problems are given to instil confidence in the reader. Due care is taken to see that the reader can easily start learning the concepts of Network Analysis without prior knowledge of mathematics.

Salient Features

- ? 100% coverage of JNTU Kakinada latest syllabus
- ? Individual topics very well supported by solved examples
- ? Roadmap to the syllabus provided for systematic reading of the text
- ? University questions incorporated at appropriate places in the text
- ? Excellent pedagogy:
- ? Solved Examples: 490
- ? Practice Problems: 214
- ? Objective Type Questions: 191
- ? Illustrations: 915

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This Book Has Been Designed As A Basic Text For Undergraduate Students Of Electrical, Electronics And Communication And Computer Engineering. In A Systematic And Friendly Manner, The Book Explains Not Only The Fundamental Concepts Like Circuit Elements, Kirchhoff S Laws, Network Equations And Resonance, But Also The Relatively Advanced Topics Like State Variable Analysis, Modern Filters, Active Rc Filters And Sensitivity Considerations. Salient Features * Basic Circuit Elements, Time And Periodic Signals And Different Types Of Systems Defined And Explained. * Network Reduction Techniques And Source Transformation Discussed. * Network Theorems Explained Using Typical Examples. * Solution Of Networks Using Graph Theory Discussed. * Analysis Of First Order, Second Order Circuits And A Perfect Transform Using Differential Equations Discussed. * Theory And Application Of Fourier And Laplace Transforms Discussed In Detail. * Interconnections Of Two-Port Networks And Their Performance In Terms Of Their Poles And Zeros Emphasised. * Both Foster And Cauer Forms Of Realisation Explained In Network Synthesis. * Classical And Modern Filter Theory Explained. * Z-Transform For Discrete Systems Explained. * Analogous Systems And Spice Discussed. * Numerous Solved Examples And Practice Problems For A Thorough Graph Of The Subject. * A Huge Question Bank Of Multiple Choice Questions With Answers Exhaustively Covering The Topics Discussed. With All These Features, The Book Would Be Extremely Useful Not Only For Undergraduate Engineering Students But Also For Amie And Gate Candidates And Practising Engineers.

The revision of this extremely popular text, Circuits and Networks: Analysis and Synthesis, comes at a time when the industry is increasingly looking to hire engineers who are able to display learning outcomes. The book has been revised

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based on internationally accepted Learning Outcomes required from a course. Additionally, key pedagogical aids, such as questions from previous year question papers are added afresh to further help students in preparing for this course and its examinations. For the tech savvy, the practice of MCQs in a digital and randomized environment will provide thrill. Salient Features: - Content revised as per internationally accepted learning outcomes - 461 Frequently asked questions derived from important previous year question papers - Features like Definition and Important Formulas are highlighted within the text

Fundamentals of 5G Mobile Networks provides an overview of the key features of the 5th Generation (5G) mobile networks, discussing the motivation for 5G and the main challenges in developing this new technology. This book provides an insight into the key areas of research that will define this new system technology paving the path towards future research and development. The book is multi-disciplinary in nature, and aims to cover a whole host of intertwined subjects that will predominantly influence the 5G landscape, including Future Internet, cloud computing, small cells and self-organizing networks (SONs), cooperative communications, dynamic spectrum management and cognitive radio, Broadcast-Broadband convergence, 5G security challenge, and green RF. The book aims to be the first of its kind towards painting a holistic perspective on 5G Mobile, allowing 5G stakeholders to capture key technology trends on different layering domains and to identify potential inter-disciplinary design aspects that need to be solved in order to deliver a 5G Mobile system that operates seamlessly as a piece of the 5G networking jigsaw. Key features: • Addresses the fundamentals of 5G mobile networks serving as a useful study guide for mobile researchers and system engineers aiming to position their research in this fast

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evolving arena. • Develops the Small cells story together with next generation SON (self-organizing networks) systems as solutions for addressing the unprecedented traffic demand and variations across cells. • Elaborates Mobile Cloud technology and Services for future communication platforms, acting as a source of inspiration for corporations looking for new business models to harness the 5G wave. • Discusses the open issues facing broad scale commercial deployment of white space networks, including the potential for applications towards the future 5G standard. • Provides a scientific assessment for broadcast and mobile broadband convergence coupled together with a 'win-win' convergence solution to harmonize the broadcasting and mobile industry. • Describes the key components, trends and challenges, as well as the system requirements for 5G transceivers to support multi standard radio, a source of inspiration for RF engineers and vendors to tie down the requirements and potential solutions for next generation handsets.

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

This comprehensive book with a blend of theory and solved problems on Basic Electrical Engineering has been updated and upgraded in the Second Edition as per the current needs to cater undergraduate students of all branches of engineering and to all those who are appearing in competitive examinations such as AMIE, GATE and graduate IETE. The text provides a lucid yet exhaustive exposition of the fundamental concepts, techniques and devices in basic electrical engineering through a series of carefully crafted solved examples, multiple choice (objective type) questions and review questions. The book covers, in general, three major areas: electric circuit theory, electric machines, and measurement and instrumentation systems.

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This book is intended to attract the attention of practitioners and researchers in academia and industry interested in challenging paradigms of coding theory and computer vision. The chapters in this comprehensive reference explore the latest developments, methods, approaches, and applications of coding theory in a wide variety of fields and endeavours. This book is compiled with a view to provide researchers, academicians, and readers with an in-depth discussion of the latest advances in this field. It consists of twelve chapters from academicians, practitioners, and researchers from different disciplines of life. All the chapters are authored by various researchers around the world covering the field of coding theory and image and video processing. This book mainly focusses on researchers who can do quality research in the area of coding theory and image and video processing and related fields. Each chapter is an independent research study, which will motivate young researchers to think about. These twelve chapters are presented in three sections and will be an eye-opener for all who systematic researchers in these fields.

This book has been designed as per the syllabus of Network Theory offered to the second year, second semester students of EEE in JNTU Hyderabad. A student centric approach has been adopted to enable easy understanding of the topics.

Salient Feature:

- Completely in sync with the syllabus of JNTU-Anantapur
- Rich Pedagogy: o 197 Solved Examples and Problems
- o 104 Objective Type Questions
- o 109 Practice Problems

This book on Network Analysis has been designed keeping in mind the students who take up this foundation course in their first semester at JNTU. Focused coverage of syllabus, variety of solved problems from previous years question papers and right level of theory makes this book very student friendly.

CIRCUIT ANALYSIS: THEORY AND PRACTICE, 5E,

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International Edition provides a thorough, engaging introduction to the theory, design, and analysis of electrical circuits. Comprehensive without being overwhelming, this reader-friendly book combines a detailed exploration of key electrical principles with an innovative, practical approach to the tools and techniques of modern circuit analysis. Coverage includes topics such as direct and alternating current, capacitance, inductance, magnetism, simple transients, transformers, Fourier series, methods of analysis, and more. Conceptual material is supported by abundant illustrations and diagrams throughout the book, as well as hundreds of step-by-step examples, thought-provoking exercises, and hands-on activities, making it easy to master and apply even complex material. Now thoroughly updated with new and revised content, illustrations, examples, and activities, the Fifth Edition also features powerful new interactive learning resources. Nearly 200 files for use in MultiSim 11 allow you to learn in a full-featured virtual workshop, complete with switches, multimeters, oscilloscopes, signal generators, and more. Designed to provide the knowledge, skills, critical thinking ability, and hands-on experience you need to confidently analyze and optimize circuits, this proven book provides ideal preparation for career success in electricity, electronics, or engineering fields.

Test Prep for Circuit and Network Theory—GATE, PSUS AND ES Examination

This book has been designed as per the syllabus of Network Theory offered to the second year, first semester (2-1) students of engineering in JNTU-Kakinada. A student centric approach has been adopted by the authors to enable easy understanding of the topics. Simple theory followed by ample solved examples are the main-stay of this book.

Overview: This book caters to a course on Circuits and Networks with coverage of both Analysis and Synthesis.

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Lucid language, fundamental discussions and illustrative examples are some of the excellent features of this text. There are numerous solved examples employing the step wise problem solving approach which helps in easy grasping of the concepts by the students. The numericals employ both AC and DC methods of analysis. Multiple Choice Questions and Practice problems have been provided in plenty and are of graded challenge levels, helping the students to prepare for competitive examinations. PSpice problems have been incorporated to help in simulation. Features: 1.

Comprehensive coverage of Fourier Method of Waveform Analysis with focus on presenting the concepts of Fourier's in a simple, student friendly manner. 2. Coverage of Active Filters with focus on the design of Active Filters-Butterworth & Chebyshev filters (Appendix A) 3. Key topics "Two-port networks" and "Laplace Transform" dealt with in details Electronic Circuit Analysis is designed to serve students of a two semester undergraduate course on electronic circuit analysis. It builds on the subject from its basic principles over fifteen chapters, providing detailed coverage on the design and analysis of electronic circuits.

Pulse and Digital Circuits is designed to cater to the needs of undergraduate students of electronics and communication engineering. Written in a lucid, student-friendly style, it covers key topics in the area of pulse and digital circuits. This is an introductory text that discusses the basic concepts involved in the design, operation and analysis of waveshaping circuits. The book includes a preliminary chapter that reviews the concepts needed to understand the subject matter. Each concept in the book is accompanied by self-explanatory circuit diagrams. Interspersed with numerous solved problems, the text presents detailed analysis of key concepts. Multivibrators and sweep generators are covered in great detail in the book.

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Electric Circuits and Networks is designed to serve as a textbook for a two-semester undergraduate course on basic electric circuits and networks. The book builds on the subject from its basic principles. Spread over seventeen chapters, the book can be taught with varying degree of emphasis on its six subsections based on the course requirement. Written in a student-friendly manner, its narrative style places adequate stress on the principles that govern the behaviour of electric circuits and networks.

This book presents new communication and networking technologies, an area that has gained significant research attention from both academia and industry in recent years. It also discusses the development of more intelligent and efficient communication technologies, which are an essential part of current day-to-day life, and reports on recent innovations in technologies, architectures, and standards relating to these technologies. The book includes research that spans a wide range of communication and networking technologies, including wireless sensor networks, big data, Internet of Things, optical and telecommunication networks, artificial intelligence, cryptography, next-generation networks, cloud computing, and natural language processing. Moreover, it focuses on novel solutions in the context of communication and networking challenges, such as optimization algorithms, network interoperability, scalable network clustering, multicasting and fault-tolerant techniques, network authentication mechanisms, and predictive analytics. This book caters to a course on Circuits and Networks with coverage of both Analysis and Synthesis. Lucid language, fundamental discussions and illustrative examples are some of the excellent features of this text. There are numerous solved examples employing the step wise problem solving approach which helps in easy grasping of the concepts by the students. The numericals employ both AC and DC methods

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of analysis. Multiple Choice Questions and Practice problems have been provided in plenty and are of graded challenge levels, helping the students to prepare for competitive examinations. PSpice problems have been incorporated to help in simulation.

This book comprehensively covers the Electrical Circuits course as defined by the new JNTU syllabus effective August 2005. This course is to be taken by the first year undergraduate students of Electrical, Instrumentation and Control streams of engineering at JNTU, Hyderabad. This book is intended to attract the attention of practitioners and researchers in the academia and industry interested in challenging paradigms of wavelets and its application with an emphasis on the recent technological developments. All the chapters are well demonstrated by various researchers around the world covering the field of mathematics and applied engineering. This book highlights the current research in the usage of wavelets in different areas such as biomedical analysis, fringe-pattern analysis, image applications, network data transfer applications, and optical measurement techniques. The entire work available in the book is mainly focusing on researchers who can do quality research in the area of the usage of wavelets in related fields. Each chapter is an independent research, which will definitely motivate the young researchers to ponder on. These 12 chapters available in four sections will be an eye opener for all who are doing systematic research in these fields. Information theoretics vis-a-vis neural networks generally embodies parametric entities and conceptual bases

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pertinent to memory considerations and information storage, information-theoretic based cost-functions, and neurocybernetics and self-organization. Existing studies only sparsely cover the entropy and/or cybernetic aspects of neural information. Information-Theoretic Aspects of Neural Networks cohesively explores this burgeoning discipline, covering topics such as: Shannon information and information dynamics neural complexity as an information processing system memory and information storage in the interconnected neural web extremum (maximum and minimum) information entropy neural network training non-conventional, statistical distance-measures for neural network optimizations symmetric and asymmetric characteristics of information-theoretic error-metrics algorithmic complexity based representation of neural information-theoretic parameters genetic algorithms versus neural information dynamics of neurocybernetics viewed in the information-theoretic plane nonlinear, information-theoretic transfer function of the neural cellular units statistical mechanics, neural networks, and information theory semiotic framework of neural information processing and neural information flow fuzzy information and neural networks neural dynamics conceived through fuzzy information parameters neural information flow dynamics informatics of neural stochastic resonance Information-Theoretic Aspects of Neural Networks acts as an exceptional resource for engineers, scientists, and computer scientists working in the field of artificial neural networks as well as biologists applying the concepts of communication theory and protocols to the functioning of

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the brain. The information in this book explores new avenues in the field and creates a common platform for analyzing the neural complex as well as artificial neural networks.

This introductory textbook on Network Analysis and Synthesis provides a comprehensive coverage of the important topics in electrical circuit analysis. The full spectrum of electrical circuit topics such as Kirchoff's Laws Mesh Analysis Nodal Analysis RLC Circuits and Resonance to Network Theorems and Applications Laplace Transforms Network Synthesis and Realizability and Filters and Attenuators are discussed with the aid of a large number of worked-out examples and practice exercises.

Network Analysis ? JNTU (K)McGraw-Hill Education

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.

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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

Offers an understanding of the theoretical principles in electronic engineering, in clear and understandable terms
Introductory Electrical Engineering With Math Explained in Accessible Language offers a text that explores the basic concepts and principles of electrical engineering. The author—a noted expert on the topic—explains the underlying mathematics involved in electrical engineering through the use of examples that help with an understanding of the theory. The text contains clear explanations of the mathematical theory that is needed to understand every topic presented, which will aid students in engineering courses who may lack the necessary basic math knowledge. Designed to breakdown complex math concepts into understandable terms, the book incorporates several math tricks and knowledge such as matrices determinant and multiplication. The author also explains how certain mathematical formulas are derived. In addition, the text includes tables of integrals and other tables to help, for example, find resistors' and capacitors' values. The author provides the accessible language, examples, and images that make the topic accessible and understandable. This important book: • Contains discussion of concepts that go from the basic to the complex, always using simplified language • Provides

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examples, diagrams, and illustrations that work to enhance explanations • Explains the mathematical knowledge that is crucial to understanding electrical concepts • Contains both solved exercises in-line with the explanations Written for students, electronic hobbyists and technicians, Introductory Electrical Engineering With Math Explained in Accessible Language is a much-needed text that is filled with the basics concepts of electrical engineering with the approachable math that aids in an understanding of the topic.

In the era of Internet of Things (IoT), and with the explosive worldwide growth of electronic data volume and the associated needs of processing, analyzing, and storing this data, several new challenges have emerged. Particularly, there is a need for novel schemes of secure authentication, integrity protection, encryption, and non-repudiation to protect the privacy of sensitive data and to secure systems.

Lightweight symmetric key cryptography and adaptive network security algorithms are in demand for mitigating these challenges. This book presents state-of-the-art research in the fields of cryptography and security in computing and communications. It covers a wide range of topics such as machine learning, intrusion detection, steganography, multi-factor authentication, and more. It is a valuable reference for researchers, engineers, practitioners, and graduate and doctoral students working in the fields of cryptography, network security, IoT, and machine learning.

Foreword -- Foreword to the First Printing -- Preface --
Chapter 1 -- Introduction -- Chapter 2 -- Message Switching Layer -- Chapter 3 -- Deadlock, Livelock, and Starvation --
Chapter 4 -- Routing Algorithms -- Chapter 5 --
CollectiveCommunicationSupport -- Chapter 6 -- Fault-Tolerant Routing -- Chapter 7 -- Network Architectures --
Chapter 8 -- Messaging Layer Software -- Chapter 9 --
Performance Evaluation -- Appendix A -- Formal Definitions

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for Deadlock Avoidance -- Appendix B -- Acronyms -- References -- Index.

Electrical Circuit Theory and Technology is a fully comprehensive text for courses in electrical and electronic principles, circuit theory and electrical technology. The coverage takes students from the fundamentals of the subject, to the completion of a first year degree level course. Thus, this book is ideal for students studying engineering for the first time, and is also suitable for pre-degree vocational courses, especially where progression to higher levels of study is likely. John Bird's approach, based on 700 worked examples supported by over 1000 problems (including answers), is ideal for students of a wide range of abilities, and can be worked through at the student's own pace. Theory is kept to a minimum, placing a firm emphasis on problem-solving skills, and making this a thoroughly practical introduction to these core subjects in the electrical and electronic engineering curriculum. This revised edition includes new material on transients and laplace transforms, with the content carefully matched to typical undergraduate modules. Free Tutor Support Material including full worked solutions to the assessment papers featured in the book will be available at <http://textbooks.elsevier.com/>. Material is only available to lecturers who have adopted the text as an essential purchase. In order to obtain your password to access the material please follow the guidelines in the book. Nowadays, graph theory is an important analysis tool in mathematics and computer science. Because of the inherent simplicity of graph theory, it can be used to model many different physical and abstract systems such as transportation and communication networks, models for business administration, political science, and psychology and so on. The purpose of this book is not only to present the latest state and development tendencies of graph theory, but to bring the

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reader far enough along the way to enable him to embark on the research problems of his own. Taking into account the large amount of knowledge about graph theory and practice presented in the book, it has two major parts: theoretical researches and applications. The book is also intended for both graduate and postgraduate students in fields such as mathematics, computer science, system sciences, biology, engineering, cybernetics, and social sciences, and as a reference for software professionals and practitioners. Network Analysis and Transmission Lines is designed specifically to cater to the needs of third semester students of B.Tech in Electronics and Communication Engineering, JNTU. The book has a perfect blend of focused content and complete coverage of the syllabus. Simple, easy-to-understand and difficult-jargon-free text elucidates the fundamentals of network analysis and transmission lines. Several solved examples, circuit diagrams and adequate questions further help students understand and apply the concepts efficiently. Highlights: • Comprehensive syllabus coverage • Lucid presentation style • Topics illustrated with diagrams for better understanding • Rich pool of pedagogy: Illustrative Examples, Review Questions and Numerical Problems

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