

Power System Engineering Soni Gupta Bhatnagar Full

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This book proposes new control and protection schemes to improve the overall stability and security of future wide-area power systems. It focuses on the high penetration levels of renewable energy sources and distributed generation, particularly with the trend towards smart grids. The control methods discussed can improve the overall stability in normal and abnormal operation conditions, while the protection methods presented can be used to ensure the secure operation of systems under most severe contingencies. Presenting stability, security, and protection methods for power systems in one concise volume, this book takes the reader on a journey from concepts and fundamentals to the latest and future trends in each topic covered, making it an informative and intriguing read for researchers, graduate students, and practitioners alike.

This accessible text, now in its Second Edition, continues to provide a comprehensive coverage of electric power generation, transmission and distribution, including the operation and management of different systems in these areas. It gives an overview of the basic principles of electrical engineering and load characteristics and provides exhaustive system-level description of several power plants, such as thermal, electric, nuclear and gas power plants. The book fully explores the basic theory and also covers emerging concepts and technologies. The conventional topics of transmission subsystem including HVDC transmission are also discussed, along with an introduction to new technologies in power transmission and control such as Flexible AC Transmission Systems (FACTS). Numerous solved examples, interspersed throughout, illustrate the concepts discussed. What is New to This Edition : Provides two new chapters on Diesel Engine Power Plants and Power System Restructuring to make the students aware of the changes taking place in the power system industry. Includes more solved and unsolved problems in each chapter to enhance the problem solving skills of the students. Primarily designed as a text for the undergraduate students of electrical engineering, the book should also be of great value to power system engineers.

This Book Is Written For Use As A Textbook For The Engineering Students Of All Disciplines At The First Year Level Of The B.Tech. Programme. The Text Material Will Also Be Useful For Electrical Engineering Students At Their Second Year And Third Year Levels. It Contains Four Parts, Namely, Electrical Circuit Theory, Electromagnetism And Electrical Machines, Electrical Measuring Instruments, And Lastly The Introduction To Power Systems. This Book Also Contains A Good Number Of Solved And Unsolved Numerical Problems. At The End Of Each Chapter References Are Included For Those Interested In Pursuing A Detailed Study.

The International Conference on Signals, Systems and Automation (ICSSA 2011) aims to spread awareness in the research and academic community regarding cutting-edge technological advancements revolutionizing the world. The main emphasis of this conference is on dissemination of information, experience, and research results on the current topics of interest through in-depth discussions and participation of researchers from all over the world. The objective is to provide a platform to scientists, research scholars, and industrialists for interacting and exchanging ideas in a number of research areas. This will facilitate communication among researchers in different fields of Electronics and Communication Engineering. The International Conference on Intelligent System and Data Processing (ICISD 2011) is organized to address various issues that will foster the creation of intelligent solutions in the future. The primary goal of the conference is to bring together worldwide leading researchers, developers, practitioners, and educators interested in advancing the state of the art in computational intelligence and data processing for exchanging knowledge that encompasses a broad range of disciplines among various distinct communities. Another goal is to promote scientific information interchange between researchers, developers, engineers, students, and practitioners working in India and abroad.

This book presents select proceedings of Electric Power and Renewable Energy Conference 2020 (EPREC 2020). This book provides rigorous discussions, case studies, and recent developments in the emerging areas of the power system, especially, renewable energy conversion systems, distributed generations, microgrid, smart grid, HVDC & FACTS, power system protection, etc. The readers would be benefited in terms of enhancing their knowledge and skills in the domain areas. The book will be a valuable reference for beginners, researchers, and professionals interested in developments in the power system.

This book is designed based on revised syllabus of JNTU, Hyderabad (AICTE model curriculum) for under-graduate (B.Tech/BE) students of all branches, those who study Basic Electrical Engineering as one of the subject in their curriculum. The primary goal of this book is to establish a firm understanding of the basic laws of Electric Circuits, Network Theorems, Resonance, Three-phase circuits, Transformers, Electrical Machines and Electrical Installation.

This book highlights recent research advances in unsupervised learning using natural computing techniques such as artificial neural networks, evolutionary algorithms, swarm intelligence, artificial immune systems, artificial life, quantum computing, DNA computing, and others. The book also includes information on the use of natural computing techniques for unsupervised learning tasks. It features several trending topics, such as big data scalability, wireless network analysis, engineering optimization, social media, and complex network analytics. It shows how these applications have triggered a number of new natural computing techniques to improve the performance of unsupervised learning methods. With this book, the readers can easily capture new advances in this area with systematic understanding of the scope in depth. Readers can rapidly explore new methods and new applications at the junction between natural computing and unsupervised learning. Includes advances on unsupervised learning using natural computing techniques Reports on topics in emerging areas such as evolutionary multi-objective unsupervised learning Features natural computing techniques such as evolutionary multi-objective algorithms and many-objective swarm intelligence algorithms

|Introduction|Operating Principles And Relays Construction|Apparatus Protection|Theory Of Arc Interruption|Fuses|Circuit Breakers|Protection Against Over Voltage|References

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Contributed papers presented at the conference held at Central Mechanical Engineering Research Institute, Durgapur. This book is intended to meet the requirements of the fresh engineers on the field to endow them with indispensable information, technical know-how to work in the power plant industries and its associated plants. The book provides a thorough understanding and the operating principles to solve the elementary and the difficult problems faced by the modern young engineers while working in the industries. This book is written on the basis of 'hands-on' experience, sound and in-depth knowledge gained by the authors during their experiences faced while working in this field. The problem generally occurs in the power plants during operation and maintenance. It has been explained in a lucid language.

This proceedings of the 13th World Congress on Engineering Asset Management covers a range of topics that are timely, relevant and practically important in the modern digital era towards safer, cost effective, efficient, and secure engineered assets such as production and manufacturing plants, process facilities, civil structures, equipment, machinery, and infrastructure. It has compiled some pioneering work by domain experts of the global Engineering Asset Management community representing both public and private sectors. The professional coverage of the book includes: Asset management in Industry 4.0; Standards and models; Sustainable assets and processes; Life cycle perspectives; Smart and safer assets; Applied data science; Workplace safety; Asset health; Advances in equipment condition monitoring; Critical asset processes; and Innovation strategy and entrepreneurship The breadth and depth of these state-of-the-art, comprehensive proceedings make them an excellent resource for asset management practitioners, researchers and academics, as well as undergraduate and postgraduate students.

This hallmark text on "Power System Engineering" has been revised extensively to bring in several new topics and update the contents with the latest technological developments. The book now covers the complete undergraduate syllabus of Power System Engineering course. All topics are supported with examples employing two/three/four bus structures. Key features Enlarged and revised chapter 1 on introduction to Power System Analysis New chapters on Voltage Stability Underground Cables Insulators for Overhead Lines Mechanical Design of Transmission Lines Neutral Grounding Corona High Voltage DC (HVDC) Transmisson New Topics on Maintenance scheduling (Chapter 7) AGC of restructured power (Chapter 8) Power Transformer (Chapter 4) Midline Boosters (Chapter 5) New Appendices on Appendix on MATLAB and SIMULINK ? programs for power system analysis Appendix on Power Quality Pedagogy : Solved Examples: 110 Practice Problems: 170 Objective Type Questions: 221

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The use of digital images in today's modernized market is rapidly increasing throughout organizations due to the prevalence of social media and digital content. Companies who wish to distribute their content over the internet face numerous security risks such as copyright violation. Advanced methods for the protection and security of digital data are constantly emerging, and up-to-date research in this area is lacking. Advancements in Security and Privacy Initiatives for Multimedia Images is a collection of innovative research on the methods and applications of contemporary techniques for the security and copyright protection of images and their distribution. While highlighting topics including simulation-based security, digital watermarking protocols, and counterfeit prevention, this book is ideally designed for security analysts, researchers, developers, programmers, academicians, practitioners, students, executives, educators, and policymakers seeking current research on modern security improvements for multimedia images.

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It has been a little over a century since the inception of interconnected networks and little has changed in the way that they are operated. Demand-supply balance methods, protection schemes, business models for electric power companies, and future development considerations have remained the same until very recently. Distributed generators, storage devices, and electric vehicles have become widespread and disrupted century-old bulk generation - bulk transmission operation. Distribution networks are no longer passive networks and now contribute to power generation. Old billing and energy trading schemes cannot accommodate this change and need revision. Furthermore, bidirectional power flow is an unprecedented phenomenon in distribution networks and traditional protection schemes require a thorough fix for proper operation. This book aims to cover new technologies, methods, and approaches developed to meet the needs of this changing field.

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