

## Sadiku Elements Of Electromagnetics 5th Solution Manual

In this book, Dr. Matthew N. O. Sadiku has shared the amazing story of how he rose from his humble beginnings in Nigeria. He described how he was raised in a Muslim home. After his conversion to Christianity, his drive led him to relocate to the United States for advanced degrees. He has provided a text that is lively from beginning to the end. The book provides a good understanding of his life, thought, and work. You will learn about what it takes to be a mover and shaker for God as you see Sadiku traverse the nation, rising to success in the academic and publishing worlds. The book is an essential reading for those interested in the genesis of greatness.

Readily available commercial software enables engineers and students to perform routine calculations and design without necessarily having a sufficient conceptual understanding of the anticipated solution. The software is so user-friendly that it usually produces a beautiful colored visualization of that solution, often camouflaging the fact that t

This is a textbook on electromagnetic fields and waves completely based on conceptual understanding of electromagnetics. The text provides operational knowledge and firm grasp of electromagnetic fundamentals aimed toward practical engineering applications by combining fundamental theory and a unique and comprehensive collection of as many as 888 conceptual questions and problems in electromagnetics. Conceptual questions are designed to strongly enforce and enhance both the theoretical concepts and understanding and problem-solving techniques and skills in electromagnetics.

Taking a vector-first approach, this text provides a balanced presentation of a host of topics including electrostatics, magnetostatics, fields, waves, and applications like transmission lines, waveguides, and antennas. The new edition includes new Application Notes detailing real-world connections, a revised math pre-test for professors to assess students' mathematical skills, and new and updated problems.

"Provides a coherent treatment of the basic principles and theories of engineering physics"--

Applied Electromagnetics and Electromagnetic Compatibility deals with Radio Frequency Interference (RFI), which is the reception of undesired radio signals originating from digital electronics and electronic equipment. With today's rapid development of radio communication, these undesired signals as well as signals due to natural phenomena such as lightning, sparking, and others are becoming increasingly important in the general area of Electro Magnetic Compatibility (EMC). EMC can be defined as the capability of some electronic equipment or system to be operated at desired levels of performance in a given electromagnetic environment without generating EM emissions unacceptable to other systems operating in the vicinity.

This second edition comes from your suggestions for a more lively format, self-learning aids for students, and the need for applications and projects without being distracted from EM Principles. Flexibility Choose the order, depth, and method of reinforcing EM Principles—the PDF files on CD provide Optional Topics, Applications, and Projects. Affordability Not only is this text priced below competing texts, but also the topics on CD (and downloadable to registered users) provide material sufficient for a second term of study with no additional book for students to buy. MATLAB This book takes full advantage of MATLAB's power to motivate and reinforce EM Principles. No other EM books is better integrated with MATLAB. The second edition is even richer and easier to incorporate into course use with the new, self-paced MATLAB tutorials on the CD and available to registered users.

Engineering Electromagnetics provides a solid foundation in electromagnetics fundamentals by emphasizing physical understanding and practical applications. Electromagnetics, with its requirements for abstract thinking, can prove challenging for students. The authors' physical and intuitive approach has produced a book that will inspire enthusiasm and interest for the material. Benefiting from a review of electromagnetic curricula at several schools and repeated use in classroom settings, this text presents material in a rigorous yet readable manner. FEATURES/BENEFITS Starts with coverage of transmission lines before addressing fundamental laws, providing a smooth transition from circuits to electromagnetics. Emphasizes physical understanding and the experimental bases of fundamental laws. Offers detailed examples and numerous practical end-of-chapter problems, with each problem's topical content clearly identified. Provides historical notes, abbreviated biographies, and hundreds of footnotes to motivate interest and enhance understanding. Back Cover Benefiting from a review of electromagnetics curricula at several schools and repeated use in classroom settings, this text presents material in a comprehensive and practical yet readable manner.

Features: Starts with coverage of transmission lines before addressing fundamental laws, providing a smooth transition from circuits to electromagnetics. Emphasizes physical understanding and the experimental bases of fundamental laws. Offers detailed examples and numerous practical end-of-chapter problems, with each problem's topical content clearly identified. Provides historical notes, abbreviated biographies, and hundreds of footnotes to motivate interest and enhance understanding.

This book introduces Radio Frequency Propagation to a broad audience. The author blends theory and practice to bring readers up-to-date in key concepts, underlying principles and practical applications of wireless communications. The presentation is designed to be easily accessible, minimizing mathematics and maximizing visuals.

Expanded and updated, this practical guide is a one-stop design reference containing all an engineer needs when designing antennas Integrates state-of-the-art technologies with a special section for step-by-step antenna design Features up-to-date bio-safety and electromagnetic compatibility regulation compliance and latest standards Newly updated with MIMO antenna design, measurements and requirements Accessible to readers of many levels, from introductory to specialist Written by a practicing expert who has hired and trained numerous engineers

This book is aimed to provide the basic preparatory material to the students who wish to study the electromagnetism as part of their course study. In the discussion of different concepts of electromagnetism, use of vectors and coordinates systems are unavoidable. Most of the books avoid details of these topics due to scope of the book or the syllabus. Most of the students take it for granted the formulae stated in the book. Some students when try to understand the three dimensional aspects of the coordinate systems they find some confusion. To help student clear their concepts on these aspects and to answer how different readily given expressions are derived we have come forward to write this book. The book starts discussion from very basic definitions of vector terminology and then relates this with the coordinate systems. Most needed coordinate systems are Cartesian, cylindrical and spherical coordinate systems. These systems are discussed from the basic level and culminate into the derivations of the longer expressions. As problems are already available in the books of similar nature authors have not included them in this book. It is hoped that this book would clear

most of the concepts needed to study the electromagnetism.

It is with great pleasure that we present to you a collection of over 200 high quality technical papers from more than 10 countries that were presented at the Biomed 2008. The papers cover almost every aspect of Biomedical Engineering, from artificial intelligence to biomechanics, from medical informatics to tissue engineering. They also come from almost all parts of the globe, from America to Europe, from the Middle East to the Asia-Pacific. This set of papers presents to you the current research work being carried out in various disciplines of Biomedical Engineering, including new and innovative researches in emerging areas. As the organizers of Biomed 2008, we are very proud to be able to come-up with this publication. We owe the success to many individuals who worked very hard to achieve this: members of the Technical Committee, the Editors, and the International Advisory Committee. We would like to take this opportunity to record our thanks and appreciation to each and every one of them. We are pretty sure that you will find many of the papers illuminating and useful for your own research and study. We hope that you will enjoy yourselves going through them as much as we had enjoyed compiling them into the proceedings. Assoc. Prof. Dr. Noor Azuan Abu Osman  
Chairperson, Organising Committee, Biomed 2008

The basic objective of this highly successful text--to present the concepts of electromagnetics in a style that is clear and interesting to read--is more fully-realized in this Second Edition than ever before. Thoroughly updated and revised, this two-semester approach to fundamental concepts and applications in electromagnetics begins with vector analysis--which is then applied throughout the text. A balanced presentation of time-varying fields and static fields prepares students for employment in today's industrial and manufacturing sectors. Mathematical theorems are treated separately from physical concepts. Students, therefore, do not need to review any more mathematics than their level of proficiency requires. Sadiku is well-known for his excellent pedagogy, and this edition refines his approach even further. Student-oriented pedagogy comprises: chapter introductions showing how the forthcoming material relates to the previous chapter, summaries, boxed formulas, and multiple choice review questions with answers allowing students to gauge their comprehension. Many new problems have been added throughout the text.

The Standard Handbook of Electronics Engineering has defined its field for over thirty years. Spun off in the 1960's from Fink's Standard Handbook of Electrical Engineering, the Christiansen book has seen its markets grow rapidly, as electronic engineering and microelectronics became the growth engine of digital computing. The EE market has now undergone another seismic shift--away from computing and into communications and media. The Handbook will retain much of its evergreen basic material, but the key applications sections will now focus upon communications, networked media, and medicine--the eventual destination of the majority of graduating EEs these days.

This book provides students with a thorough theoretical understanding of electromagnetic field equations and it also treats a large number of applications. The text is a comprehensive two-semester textbook. The work treats most topics in two steps -- a short, introductory chapter followed by a second chapter with in-depth extensive treatment; between 10 to 30 applications per topic; examples and exercises throughout the book; experiments, problems and summaries. The new edition includes: modifications to about 30-40% of the end of chapter problems; a new introduction to electromagnetics based on behavior of charges; a new section on units; MATLAB tools for solution of problems and demonstration of subjects; most chapters include a summary. The book is an undergraduate textbook at the Junior level, intended for required classes in electromagnetics. It is written in simple terms with all details of derivations included and all steps in solutions listed. It requires little beyond basic calculus and can be used for self-study. The wealth of examples and alternative explanations makes it very approachable by students. More than 400 examples and exercises, exercising every topic in the book Includes 600 end-of-chapter problems, many of them applications or simplified applications Discusses the finite element, finite difference and method of moments in a dedicated chapter

Ideal for advanced undergraduate and first-year graduate courses in analog filter design and signal processing, Design of Analog Filters integrates theory and practice in order to provide a modern and practical "how-to" approach to design. A complete revision of Mac E. Van Valkenburg's classic work, Analog Filter Design (1982), this text builds on the presentation and style of its predecessor, updating it to meet the needs of today's engineering students and practicing engineers. Reflecting recent developments in the field and emphasizing intuitive understanding, it provides students with an up-to-date introduction and design guidelines and also helps them to develop a "feel" for analog circuit behavior. Design of Analog Filters, Second Edition, moves beyond the elementary treatment of active filters built with opamps. The book discusses fundamental concepts; opamps; first- and second-order filters; second-order filters with arbitrary transmission zeros; filters with maximally flat magnitude, with equal ripple (Chebyshev) magnitude, and with inverse Chebyshev and Cauer response functions; frequency transformation; cascade designs; delay filters and delay equalization; sensitivity; LC ladder filters; ladder simulations by element replacement and by operational simulation; in addition, high-frequency filters based on transconductance-C concepts and on designs using spiral inductors are covered; as are switched-capacitor filters, and noise issues. Features \* Includes a wealth of examples, all of which have been tested on simulators or in actual industrial use \* Uses the very easy-to-use and learn program Electronics Workbench to help students simulate actual experimental behavior \* Provides sample design tables and design and performance curves \* Avoids sophisticated mathematics wherever possible in favor of algebraic or intuitive derivations \* Addresses practical and realistic design New to this Edition \* Includes a chapter on noise (Chapter 18) \* Chapter 16 offers a comparison of active and passive inductor design and a discussion of high-frequency active LC filter design using spiral inductors \* Texas Instruments OPA300 opamps replace the Harris HA2542-2 opamps

Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately, there's Schaum's. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-

follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you:

- Hundreds of supplementary problems to reinforce knowledge
- Concise explanations of all electromagnetic concepts
- Information on current density, capacitance, magnetic fields, inductance, electromagnetic waves, transmission lines, and antennas
- New section on transmission line parameters
- New section illustrating the use of admittance plane and chart
- New section on impedance transformation
- New chapter on sky waves, attenuation and delay effects in troposphere, line of sight propagation and other relevant topics
- Support for all major textbooks for courses in Electromagnetics PLUS: Access to revised Schaums.com website with access to 20 problem-solving videos, and more.

Schaum's reinforces the main concepts required in your course and offers hundreds of practice questions to help you succeed. Use Schaum's to shorten your study time-and get your best test scores!

Schaum's Outlines – Problem solved.

As the availability of powerful computer resources has grown over the last three decades, the art of computation of electromagnetic (EM) problems has also grown - exponentially. Despite this dramatic growth, however, the EM community lacked a comprehensive text on the computational techniques used to solve EM problems. The first edition of Numerical Techniques in Electromagnetics filled that gap and became the reference of choice for thousands of engineers, researchers, and students. The Second Edition of this bestselling text reflects the continuing increase in awareness and use of numerical techniques and incorporates advances and refinements made in recent years. Most notable among these are the improvements made to the standard algorithm for the finite difference time domain (FDTD) method and treatment of absorbing boundary conditions in FDTD, finite element, and transmission-line-matrix methods. The author also added a chapter on the method of lines. Numerical Techniques in Electromagnetics continues to teach readers how to pose, numerically analyze, and solve EM problems, give them the ability to expand their problem-solving skills using a variety of methods, and prepare them for research in electromagnetism. Now the Second Edition goes even further toward providing a comprehensive resource that addresses all of the most useful computation methods for EM problems.

As electromagnetics, photonics, and materials science evolve, it is increasingly important for students and practitioners in the physical sciences and engineering to understand vector calculus and tensor analysis. This book provides a review of vector calculus. This review includes necessary excursions into tensor analysis intended as the reader's first exposure to tensors, making aspects of tensors understandable to advanced undergraduate students. This book will also prepare the reader for more advanced studies in vector calculus and tensor analysis.

Elements of Electromagnetics, Fourth Edition, uses a vectors-first approach to explain electrostatics, magnetostatics, fields, waves, and applications like transmission lines, waveguides, and antennas. It also provides a balanced presentation of time-varying and static fields, preparing students for employment in today's industrial and manufacturing sectors. Streamlined to facilitate student understanding, this edition features worked examples in every chapter that explain how to use the theory presented in the text to solve different kinds of problems. Numerical methods, including MATLAB and vector analysis, are also included to help students analyze situations that they are likely to encounter in industry practice. Elements of Electromagnetics, Fourth Edition, is designed for introductory undergraduate courses in electromagnetics. An Instructor's Solutions Manual (co-authored by Sudarshan Rao Nelatury of Penn State Erie, The Behrend College) and PowerPoint slides of all figures in the text are available to adopters.

Nanotechnology provides tools for creating functional materials, devices, and systems by controlling materials at the atomic and molecular scales and making use of novel properties and phenomena. Nanotechnology-enabled sensors find applications in several fields such as health and safety, medicine, process control and diagnostics. This book provides the reader with information on how nanotechnology enabled sensors are currently being used and how they will be used in the future in such diverse fields as communications, building and facilities, medicine, safety, and security, including both homeland defense and military operations.

Thoroughly updated and revised, this third edition of Sadiku's Elements of Electromagnetics is designed for the standard sophomore/junior level electromagnetics course taught in departments of electrical engineering. It takes a two-semester approach to fundamental concepts and applications in electromagnetics beginning with vector analysis-which is then applied throughout the text. A balanced presentation of time-varying fields and static fields prepares students for employment in today's industrial and manufacturing sectors. Mathematical theorems are treated separately from physical concepts. Students, therefore, do not need to review any more mathematics than their level of proficiency requires. Sadiku is well-known for his excellent pedagogy, and this edition refines his approach even further. Student-oriented pedagogy comprises: chapter introductions showing how the forthcoming material relates to the previous chapter, summaries, boxed formulas, and multiple choice review questions with answers allowing students to gauge their comprehension. Many new problems have been added throughout the text, as well as a new chapter on "Modern Topics" covering microwaves, electromagnetic interference and compatibility, and optical fibers. This book is appropriate for sophomore/junior level students in electrical engineering. It will also be accompanied by a Solutions Manual, available free to adopters of the main text.

Discover an innovative and fresh approach to teaching classical electromagnetics at a foundational level Introduction to Electromagnetic Waves with Maxwell's Equations delivers an accessible and practical approach to teaching the wellknown topics all electromagnetics instructors must include in their syllabus. Based on the author's decades of experience teaching the subject, the book is carefully tuned to be relevant to an audience of engineering students who have already been exposed to the basic curricula of linear algebra and multivariate calculus. Forming the backbone of the book, Maxwell's equations are developed step-by-step in consecutive chapters, while related electromagnetic phenomena are discussed simultaneously. The author presents accompanying mathematical tools alongside the material

provided in the book to assist students with retention and comprehension. The book contains over 100 solved problems and examples with stepwise solutions offered alongside them. An accompanying website provides readers with additional problems and solutions. Readers will also benefit from the inclusion of: A thorough introduction to preliminary concepts in the field, including scalar and vector fields, cartesian coordinate systems, basic vector operations, orthogonal coordinate systems, and electrostatics, magnetostatics, and electromagnetics An exploration of Gauss' Law, including integral forms, differential forms, and boundary conditions A discussion of Ampere's Law, including integral and differential forms and Stoke's Theorem An examination of Faraday's Law, including integral and differential forms and the Lorentz Force Law Perfect for third-and fourth-year undergraduate students in electrical engineering, mechanical engineering, applied maths, physics, and computer science, Introduction to Electromagnetic Waves with Maxwell's Equations will also earn a place in the libraries of graduate and postgraduate students in any STEM program with applications in electromagnetics. Electric Field Analysis is both a student-friendly textbook and a valuable tool for engineers and physicists engaged in the design work of high-voltage insulation systems. The text begins by introducing the physical and mathematical fundamentals of electric fields, presenting problems from power and dielectric engineering to show how the theories are put into practice. The book then describes various techniques for electric field analysis and their significance in the validation of numerically computed results, as well as: Discusses finite difference, finite element, charge simulation, and surface charge simulation methods for the numerical computation of electric fields Provides case studies for electric field distribution in a cable termination, around a post insulator, in a condenser bushing, and around a gas-insulated substation (GIS) spacer Explores numerical field calculation for electric field optimization, demonstrating contour correction and examining the application of artificial neural networks Explains how high-voltage field optimization studies are carried out to meet the desired engineering needs Electric Field Analysis is accompanied by an easy-to-use yet comprehensive software for electric field computation. The software, along with a wealth of supporting content, is available for download with qualifying course adoption.

A four year Electrical and Electronic engineering curriculum normally contains two modules of electromagnetic field theories during the first two years. However, some curricula do not have enough slots to accommodate the two modules. This book, Electromagnetic Field Theories, is designed for Electrical and Electronic engineering undergraduate students to provide fundamental knowledge of electromagnetic fields and waves in a structured manner. A comprehensive fundamental knowledge of electric and magnetic fields is required to understand the working principles of generators, motors and transformers. This knowledge is also necessary to analyze transmission lines, substations, insulator flashover mechanism, transient phenomena, etc. Recently, academics and researches are working for sending electrical power to a remote area by designing a suitable antenna. In this case, the knowledge of electromagnetic fields is considered as important tool.

The second edition of Electromagnetism: Theory and Applications has been updated to cover some additional aspects of theory and nearly all modern applications. The semi-historical approach is unchanged, but further historical comments have been introduced at various places in the book to give a better insight into the development of the subject as well as to make the study more interesting and palatable to the students. What is New to This Edition Vector transformations in different coordinate systems have been included in the chapter on Vector Analysis. The treatment forms the basis of vector potentials for three-dimensional problems. Chapter 13 on Vector Potentials has been significantly expanded for a clear understanding of the properties of vector potentials, in order to also solve three-dimensional EM problems numerically. A section dealing with the derivation and interpretation of Hertz Vector has been included in Chapter 13. A practical problem on induction heating of flat metal plates has been added to the chapter on Magnetic Diffusion. The topics of wave guidance and radiation have been expanded with emphasis on practical aspects. Sections on analysis of cylindrical dielectric waveguide (e.g. of optical fibres) have been added to Chapters 18 and 22. New sections on basis and explanations of modal transmissions have been added. Characteristics and practical details of basic antenna structures and arrays have been treated in greater detail. Provides comprehensive treatment of FEM (Finite Element Method), covering both its variational basis and procedural details, to enable the readers to use this method without going into the heavy mathematics underlying the method. Describes FDM (Finite Difference Method) in more detail with its convergence requirement. Introduces modern numerical methods like FDTD (Finite Difference Time Domain) and method of moments (MOM). A new chapter on Modern Topics and Applications covers both high frequency and low frequency applications. Appendices contain in-depth analysis of self-inductance and non-conservative fields (Appendix 6), proof regarding the boundary conditions (Appendix 8), theory of bicylindrical coordinate system to provide the physical basis of the circuit approach to the cylindrical transmission line systems (Appendix 10), and properties of useful functions like Bessel and Legendre functions (Appendix 9). The book is designed to serve as a core text for students of electrical engineering. Besides, it will be useful to postgraduate physics students as well as research engineers and design and development engineers in industries.

This text examines applications and covers statics with an emphasis on the dynamics of engineering electromagnetics. This edition features a new chapter on electromagnetic principles for photonics, and sections on cylindrical metallic waveguides and losses in waveguides and resonators.

The demand for communication networks has increased dramatically in the last few years, creating a need for an intermediate network that operates over a metropolitan area at comparatively high data rates with simple protocols. With some characteristics of local area networks and wide area networks, the metropolitan area network (MAN) technology reflects the best features of both. The motivations for MAN technology include o interconnection of LANs o high-speed services o integrated services. MANs can be used in the following areas: LAN interconnection Filetransfer Distributed processing Remote services Remote login Metropolitan Area Networks provides an introduction to the key concepts of MANs in an easily understood style. Organized into five chapters, this unique book acts as an excellent reference for a beginner as well as for the veteran in the field. Topics include: Introductory and background information about MANs Interworking devices, MAN topologies, and key issues Various popular protocols proposed for MANs Modeling and performance analysis of common MAN topologies Emerging MAN-related technologies such as BISDN, ATM networks, frame relay, cell relay, SONET, and SMDS For a broad understanding of this expanding subject, Metropolitan Area Networks serves as the singular standard in the field.

Elements of Electromagnetics is designed for a first course in Electromagnetics for students towards an electrical engineering

degree. This core course is usually required of all ECE majors. A split occurs in the market between professors who present vectors first and professors who present transmission lines first, Sadiku's text takes the vectors-first approach. The 5th edition is primarily focused on adding new and revised homework problems, particularly problems that focus on real-world practical examples. MATLAB exercises have been incorporated into each chapter for extended practice. The intensive review and accuracy checking process conducted in the 4th edition will be highlighted in the preface.

This well-known undergraduate electrodynamics textbook is now available in a more affordable printing from Cambridge University Press. The Fourth Edition provides a rigorous, yet clear and accessible treatment of the fundamentals of electromagnetic theory and offers a sound platform for explorations of related applications (AC circuits, antennas, transmission lines, plasmas, optics and more). Written keeping in mind the conceptual hurdles typically faced by undergraduate students, this textbook illustrates the theoretical steps with well-chosen examples and careful illustrations. It balances text and equations, allowing the physics to shine through without compromising the rigour of the math, and includes numerous problems, varying from straightforward to elaborate, so that students can be assigned some problems to build their confidence and others to stretch their minds. A Solutions Manual is available to instructors teaching from the book; access can be requested from the resources section at [www.cambridge.org/electrodynamics](http://www.cambridge.org/electrodynamics).

Indoor Wireless Communications: From Theory to Implementation provides an in-depth reference for design engineers, system planners and post graduate students interested in the vastly popular field of indoor wireless communications. It contains wireless applications and services for in-building scenarios and knowledge of key elements in the design and implementation of these systems. Technologies such as Wireless Local Area Networks, Bluetooth, ZigBee, Indoor Optical Communications, WiMAX, UMTS and GSM for indoor environments are fully explained and illustrated with examples. Antennas and propagation issues for in-building scenarios are also discussed, emphasizing models and antenna types specifically developed for indoor communications. An exhaustive survey on indoor wireless communication equipment is also presented, covering all available technologies including antennas, distribution systems, transceivers and base stations.

Elements of Electromagnetics Oxford University Press, USA

Broadband networks, such as asynchronous transfer mode (ATM), frame relay, and leased lines, allow us to easily access multimedia services (data, voice, and video) in one package. Exploring why broadband networks are important in modern-day telecommunications, Introduction to Broadband Communication Systems covers the concepts and components of both standard and emerging broadband communication network systems. After introducing the fundamental concepts of broadband communication systems, the book discusses Internet-based networks, such as intranets and extranets. It then addresses the networking technologies of X.25 and frame relay, fiber channels, a synchronous optical network (SONET), a virtual private network (VPN), an integrated service digital network (ISDN), broadband ISDN (B-ISDN), and ATM. The authors also cover access networks, including digital subscriber lines (DSL), cable modems, and passive optical networks, as well as explore wireless networks, such as wireless data services, personal communications services (PCS), and satellite communications. The book concludes with chapters on network management, network security, and network testing, fault tolerance, and analysis. With up-to-date, detailed information on the state-of-the-art technology in broadband communication systems, this resource illustrates how some networks have the potential of eventually replacing traditional dial-up Internet. Requiring only a general knowledge of communication systems theory, the text is suitable for a one- or two-semester course for advanced undergraduate and beginning graduate students in engineering as well as for short seminars on broadband communication systems.

There is currently no single book that covers the mathematics, circuits, and electromagnetics backgrounds needed for the study of electromagnetic compatibility (EMC). This book aims to redress the balance by focusing on EMC and providing the background in all three disciplines. This background is necessary for many EMC practitioners who have been out of study for some time and who are attempting to follow and confidently utilize more advanced EMC texts. The book is split into three parts: Part 1 is the refresher course in the underlying mathematics; Part 2 is the foundational chapters in electrical circuit theory; Part 3 is the heart of the book: electric and magnetic fields, waves, transmission lines and antennas. Each part of the book provides an independent area of study, yet each is the logical step to the next area, providing a comprehensive course through each topic. Practical EMC applications at the end of each chapter illustrate the applicability of the chapter topics. The Appendix reviews the fundamentals of EMC testing and measurements.

International Conference on Engineering Education and Research

The book is primarily designed to cater to the needs of undergraduate and postgraduate students of Electronics and Communication Engineering and allied branches. It also caters for fundamental requirements of professionals working on design and development of antenna and wave propagation related equipment either in research laboratories or industries or academic institutions elsewhere. The book has been written with intent to grasp the basic understanding of theoretical as well as practical aspects of electromagnetic wave propagation and antenna engineering. The text has been aptly scripted considering the requirements of average students who can easily grasp and comprehend the basics of wave propagation and radiation mechanism of varieties of antennas coupled with their critical functionalities, utilities, advantages/disadvantages without any external assistance of teachers or other reference books. The book broaches very well on practical methods of parametric measurements of antenna with right measuring test equipment and associated tools. The last chapter of the book is dedicated to advance technology adopted in design and development of modern antenna. Key features

- A fairly large number of well labelled diagrams to provide practical understanding of the concepts.
- The placement of numericals at appropriate places develops confidence among readers and enthruses them further to read in depth to crack any regular or competitive examinations.
- Chapter summary highlights important points for quick recap and revision before examination.
- Well-crafted multiple choice questions with answers at the end of each chapter to stimulate thought process and prepare better for viva-voce and competitive examinations.
- Appropriate number of unsolved numerical problems with answers to improve problem solving skill of students.

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