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The latest ideas in machine analysis and design have led to a major revision of the field's leading handbook. New chapters cover ergonomics, safety, and computer-aided design, with revised information on numerical methods, belt devices, statistics, standards, and codes and regulations. Key features include: *new material on ergonomics, safety, and computer-aided design; *practical reference data that helps machine designers solve common problems--with a minimum of theory. *current CAS/CAM applications, other machine computational aids, and robotic applications in machine design. This definitive machine design handbook for product designers,

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project engineers, design engineers, and manufacturing engineers covers every aspect of machine construction and operations. Voluminous and heavily illustrated, it discusses standards, codes and regulations; wear; solid materials, seals; flywheels; power screws; threaded fasteners; springs; lubrication; gaskets; coupling; belt drive; gears; shafting; vibration and control; linkage; and corrosion.

Engineering Physics has been specifically designed and written to meet the requirements of the engineering students of GTU. All the topics and sub-topics are neatly arranged for the students. A number of assignment problems, along with questions and answers, have also been provided. MCQs for the bridge course have been designed in such a way that the

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students can recollect every concept that they have read and apply easily during the examination. **KEY FEATURES** •

Detailed discussion of every topic from elementary to comprehensive level with several worked-out examples • A section on practicals • Solved Question Papers- Dec 2013 and June 2014 • As per the syllabus for 2013-14

The fundamentals and implementation of digital electronics are essential to understanding the design and working of consumer/industrial electronics, communications, embedded systems, computers, security and military equipment. Devices used in applications such as these are constantly decreasing in size and employing more complex technology. It is therefore essential for engineers and students to understand the

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fundamentals, implementation and application principles of digital electronics, devices and integrated circuits. This is so that they can use the most appropriate and effective technique to suit their technical need. This book provides practical and comprehensive coverage of digital electronics, bringing together information on fundamental theory, operational aspects and potential applications. With worked problems, examples, and review questions for each chapter, Digital Electronics includes: information on number systems, binary codes, digital arithmetic, logic gates and families, and Boolean algebra; an in-depth look at multiplexers, de-multiplexers, devices for arithmetic operations, flip-flops and related devices, counters and registers, and data conversion circuits; up-

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to-date coverage of recent application fields, such as programmable logic devices, microprocessors, microcontrollers, digital troubleshooting and digital instrumentation. A comprehensive, must-read book on digital electronics for senior undergraduate and graduate students of electrical, electronics and computer engineering, and a valuable reference book for professionals and researchers.

Physics (Group 1)

A Textbook of Engineering Physics

Grid Integration of Wind Energy Conversion Systems

Electrical Installation Estimating & Costing

Generation and Utilization of Electrical Energy

Matrices in Engineering Problems

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This book covers the fundamentals and significance of 2-D materials and related semiconductor transistor technologies for the next-generation ultra low power applications. It provides comprehensive coverage on advanced low power transistors such as NCFETs, FinFETs, TFETs, and flexible transistors for future ultra low power applications owing to their better subthreshold swing and scalability. In addition, text examines the use of field-effect transistors for biosensor applications and covers design considerations and compact modeling of advanced low power transistors such as NCFETs, FinFETs, and TFETs. TCAD simulation examples are also provided. FEATURES Discusses the latest updates in the field of ultra low power semiconductor transistors Provides both

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experimental and analytical solutions for TFETs and NCFETs
Presents synthesis and fabrication processes for FinFETs
Reviews details on 2-D materials and 2-D transistors Explo
the application of FETs for biosensing in the healthcare field
This book is aimed at researchers, professionals, and gradu
students in electrical engineering, electronics and
communication engineering, electron devices, nanoelectron
and nanotechnology, microelectronics, and solid-state circu
Latest Edition: 3D Printing and Additive Manufacturing:
Principles and Applications (with Companion Media Pack).
Fourth edition of Rapid Prototyping. Rapid Prototyping (RP)
has revolutionized the landscape of how prototypes and
products are made and small batch manufacturing carried

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This book gives a comprehensive coverage of RP and rapid tooling processes, data formats and applications. A CD-ROM included in the book, presents RP and its principles in an interactive way to augment the learning experience. Special features: Most comprehensive coverage of more than 30 RP Systems Understanding of RP through applications In-depth revelation of the basic principles behind major RP techniques Discussion of important issues such as STL file problems of RP parts Interactive CD-ROM to demonstrate major RP techniques RP company background information and contact addresses

There are various types of waves including water, sound, electromagnetic, seismic and shock etc. These waves need

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be analyzed and understood for different practical applications. This book is an attempt to consider the wave detail to understand the physical and mathematical phenomena. A major challenge is to model waves by experimental studies. The aim of this book will be to address the efficient and recently developed theories along with the basic equations of wave dynamics. The latest development analytical/semi analytical and numerical methods with respect to wave dynamics will also be covered. Further few challenging experimental studies will then be considered for related problems. This book presents advances in wave dynamics in simple and easy to follow chapters for the benefit of the readers/researchers.

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Wave Dynamics

Handbook For Formulas (GATE, ESE, SSC JE and Other Competitive Exams)

Stability and Control

Engineering Physics (with Practicals) (GTU), 8th Edition

Principles, Devices and Applications

Power System Dynamics

The living body is a difficult object to measure: accurate measurements of physiological signals require sensors and instruments capable of high specificity and selectivity that do not interfere with the systems under study. As a result, detailed

knowledge of sensor and instrument properties is required to be able to select the "best" sensor from o

Wind energy is a reliable, natural and renewable electrical power supply. The high installed capacity of today's wind turbines and decreasing plant costs have shown that wind power can be competitive with conventional, more heavily polluting, fuels in the long term. Focusing on the electrical engineering aspects of wind energy, this completely revised edition provides a detailed treatment of electrical and mechanical components and their

interdependency, power control and supervision in wind power plants, and the grid integration facility. The book incorporates all the recent technical developments in electrical power conversion systems and essential operating conditions. Provides guidelines for the design, construction and installation of wind power plants Presents the history of wind technology, wind resources and economics of wind energy generation Introduces operating results and cost considerations Describes the fundamental characteristics and theoretical tools of electrical and mechanical components

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Discusses conventional and new types of generators, converters and power electronics Offers a comprehensive treatment of grid integration including the effect of power fluctuations on harmonics Focuses on improved use of grid capacities and grid support for fixed-and variable-speed controlled wind power plants Outlines power conditioning and control systems to ensure the safe operation of plants Fully revised and updated, this new edition will continue to be the definitive resource for researchers and practitioners involved in the planning, installation and grid integration of wind turbines and power

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plants. The thorough approach will also prove highly beneficial to university students and practitioners in wind engineering, turbine design and manufacture and electrical power engineering.

Engineering Physics (with Practicals) (GTU),

8th Edition Vikas Publishing House

Journal of Education & Psychology

Rapid Prototyping

MCAT Practice Test

Electromagnetic Field Theory

Engineering Physics

Engineering Thermodynamics

This book is intended as an undergraduate text

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introducing matrix methods as they relate to engineering problems. It begins with the fundamentals of mathematics of matrices and determinants. Matrix inversion is discussed, with an introduction of the well known reduction methods. Equation sets are viewed as vector transformations, and the conditions of their solvability are explored. Orthogonal matrices are introduced with examples showing application to many problems requiring three dimensional thinking. The angular velocity matrix is shown to emerge from the differentiation of the 3-D orthogonal matrix, leading to the discussion of particle and rigid body dynamics. The book continues with the eigenvalue problem and its

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application to multi-variable vibrations. Because the eigenvalue problem requires some operations with polynomials, a separate discussion of these is given in an appendix. The example of the vibrating string is given with a comparison of the matrix analysis to the continuous solution. Table of Contents: Matrix Fundamentals / Determinants / Matrix Inversion / Linear Simultaneous Equation Sets / Orthogonal Transforms / Matrix Eigenvalue Analysis / Matrix Analysis of Vibrating Systems

The book is divided into five parts with a total of 14 chapters. The first part begins by introducing the basic concepts of stability. The second part develops the

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system model in detail. Part three presents the small signal stability analysis applied to the problem of low frequency oscillations. Part four presents the SSR phenomenon and part five deals with the transient stability problem. The basic concepts of voltage stability and methods of analysis are discussed in Appendix A.

The supply of petroleum continues to dwindle at an alarming rate, yet it is the source of a range of products- from gasoline and diesel to plastic, rubber, and synthetic fiber. Critical to the future of this commodity is that we learn to use it more judiciously and efficiently. Fundamentals of Petroleum and

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Petrochemical Engineering provides a holi

Common for All Engineering Branches

Mechanical Engineering

Basic Civil Engineering

Satellite Communications Systems Engineering

Semiconductor Optoelectronic Devices

Digital Electronics

Based on over 30 years of successful teaching experience in this course, Robert Pagano's introductory text takes an intuitive, concepts-based approach to descriptive and inferential statistics. He uses the sign test to introduce inferential statistics, empirically derived sampling distributions, many

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visual aids, and lots of interesting examples to promote student understanding. One of the hallmarks of this text is the positive feedback from students -- even students who are not mathematically inclined praise the text for its clarity, detailed presentation, and use of humor to help make concepts accessible and memorable. Thorough explanations precede the introduction of every formula, and the exercises that immediately follow include a step-by-step model that lets students compare their work against fully solved examples. This combination makes the text perfect for students taking their first statistics course in psychology or other social and behavioral sciences. Important Notice: Media content referenced within the

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product description or the product text may not be available in the ebook version.

Strictly according to the New Syllabus of Gujarat Technology University, Ahmedabad (Common to All Branches of B.E. / B.Tech 1st year)

Drawn from the 7th Glion Colloquium held in 2009, this volume considers the role of research universities in an innovation-driven global society. Whether in the "old world" of Europe and North America or in rapidly developing nations, the message is clear: innovation has become the key to prosperity and social well-being in a hypercompetitive global economy. Part I introduces several forms of economic, technological, and social innovation. Part II discusses agents of

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innovation from the points of view of a research university, industry, and national innovation policies. Part III presents university leaders from long-established and emerging institutions to compare how regional and institutional characteristics shape innovation strategies. Part IV focuses on approaches to innovation at national and institutional levels, including a U.S. approach to energy challenges, the shift of high-tech industry toward open innovation, and the challenges of creating world-class universities. Part V addresses the intellectual character of innovation and its relationship to the university's mission. Today's economy requires not only leadership in innovation but also educated

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citizens capable of applying technology, talent, and capital in new ways. Institutions of higher learning must collaborate with industry and government to create a climate and culture that enable innovation to thrive.

A Computer Approach (SI Units Version)

Physics: Principles & Problems, Student Edition

University Research for Innovation

Advances in Information and Energy Processing and Storage

Principles and Applications (with Companion CD-ROM), 2nd Edition

Single Variable

This book presents research dedicated

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to solving scientific and technological problems in many areas of electronics, photonics and renewable energy. Energy and information are interconnected and are essential elements for the development of human society.

Transmission, processing and storage of information requires energy consumption, while the efficient use and access to new energy sources requires new information (ideas and expertise) and the design of novel

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systems such as photovoltaic devices, fuel cells and batteries. Semiconductor physics creates the knowledge base for the development of information (computers, cell phones, etc.) and energy (photovoltaic) technologies. The exchange of ideas and expertise between these two technologies is critical and expands beyond semiconductors. Continued progress in information and renewable energy technologies requires miniaturization of devices and

reduction of costs, energy and material consumption. The latest generation of electronic devices is now approaching nanometer scale dimensions, new materials are being introduced into electronics manufacturing at an unprecedented rate, and alternative technologies to mainstream CMOS are evolving. Nanotechnology is widely accepted as a source of potential solutions in securing future progress for information and energy

technologies. Semiconductor Nanotechnology features chapters that cover the following areas: atomic scale materials design, bio- and molecular electronics, high frequency electronics, fabrication of nanodevices, magnetic materials and spintronics, materials and processes for integrated and subwave optoelectronics, nanoCMOS, new materials for FETs and other devices, nanoelectronics system architecture,

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nano optics and lasers, non-silicon materials and devices, chemical and biosensors, quantum effects in devices, nano science and technology applications in the development of novel solar energy devices, and fuel cells and batteries.

Comparison is a powerful cognitive research tool in science since it does "across studies" to evaluate similarities and differences, e.g. across taxa or diseases. This book

deals with comparative research on plant disease epidemics. Comparisons are done in specifically designed experiments or with posterior analyses. From the apparently unlimited diversity of epidemics of hundreds of diseases, comparative epidemiology may eventually extract a number of basic types. These findings are very important to crop protection. Plant disease epidemiology, being the ecological branch of plant pathology, may also be of value to

ecologists, but also epidemiologists in the areas of animal or human diseases may find interesting results, applicable to their areas of research. This book recalls the basics required for an understanding of the nanoworld (quantum physics, molecular biology, micro and nanoelectronics) and gives examples of applications in various fields: materials, energy, devices, data management and life sciences. It is clearly shown how the nanoworld is

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at the crossing point of knowledge and innovation. Written by an expert who spent a large part of his professional life in the field, the title also gives a general insight into the evolution of nanosciences and nanotechnologies. The reader is thus provided with an introduction to this complex area with different "tracks" for further personal comprehension and reflection. This guided and illustrated tour also reveals the importance of the nanoworld

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in everyday life.

Fundamentals of Petroleum and

Petrochemical Engineering

Understanding Statistics in the

Behavioral Sciences

An Introduction to Nanoscience and

Nanotechnology

Semiconductor Devices and Technologies

for Future Ultra Low Power Electronics

Mechanics of Materials

The first true introduction to semiconductor

optoelectronic devices, this book provides an accessible, well-organized overview of optoelectric devices that emphasizes basic principles. Coverage begins with an optional review of key concepts—such as properties of compound semiconductor, quantum mechanics, semiconductor statistics, carrier transport properties, optical processes, and junction theory—then progress gradually through more advanced topics. The Second Edition has been both updated and expanded to include the recent developments in the field.

Generation and Utilization of Electrical Energy is a

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comprehensive text designed for undergraduate courses in electrical engineering. The text introduces the reader to the generation of electrical energy and then goes on to explain how this energy can be effectively utilized for various applications like welding, electric traction, illumination, and electrolysis. The detailed explanations of practical applications make this an ideal reference book both inside and outside the classroom.

S. Chand's Physics, designed to serve as a textbook for students pursuing their engineering degree course, B.E. in Gujarat Technical University. The

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book is written with the singular objective of providing the students of GTU with a distinct source material as per the syllabus. The philosophy of presentation of the material in the book is based upon decades of classroom interaction of the authors. In each chapter, the fundamental concepts pertinent to the topic are highlighted and the in-between continuity is emphasized. Throughout the book attention is given to the proper presentation of concepts and practical applications are cited to highlight the engineering aspects. A number of problems are solved. New problems are included in

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order to expedite the learning process of students of all hues and to improve their academic performance. The fundamental concepts are emphasized in each chapter and the details are developed in an easy-to-follow style. Each chapter is divided into smaller parts and sub-headings are provided to make the reading a pleasant journey from one interesting topic to another important topic.

S. Chand's Engineering Physics (For GTU, Ahmedabad)

*Comparative Epidemiology of Plant Diseases
Fundamentals of Machine Design*

Semiconductor Nanotechnology *A HEAT TRANSFER TEXTBOOK*

Biomedical Sensors and Instruments

A handbook of Mechanical Engineering For Formulas "Mechanical Engineering Formulas - all subjects formulas with concepts and course outlines are given here. Select your desired course and you can revise all the Formulas within an hour only. When you are a mechanical engineer, you need to know the important formulas during the competitive exams like GATE, ESE and other exams to solve the answers easily using the formula. So, you must

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know the all-important formulas in the mechanical engineering Subjects. This book is specially prepared for mechanical engineers". Topics Inside Book Si multiples Basic units (distance, area, volume, mass, density) Thermodynamics Thermal engineering Heat transfer Fluid mechanics Strength of materials Theory of machines Machine design Manufacturing Industrial engineering Get the free kindle version of this book by purchasing the Paperback.!

The first edition of Satellite Communications Systems Engineering (Wiley 2008) was written for those concerned with the design and performance of

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satellite communications systems employed in fixed point to point, broadcasting, mobile, radio navigation, data relay, computer communications, and related satellite based applications. This welcome Second Edition continues the basic premise and enhances the publication with the latest updated information and new technologies developed since the publication of the first edition. The book is based on graduate level satellite communications course material and has served as the primary text for electrical engineering Masters and Doctoral level courses in satellite communications and related areas. Introductory to

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advanced engineering level students in electrical, communications and wireless network courses, and electrical engineers, communications engineers, systems engineers, and wireless network engineers looking for a refresher will find this essential text invaluable.

A Textbook of Engineering Physics is written with two distinct objectives: to provide a single source of information for engineering undergraduates of different specializations and provide them a solid base in physics. Successive editions of the book incorporated topics as required by students pursuing their studies in various universities. In this new

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edition the contents are fine-tuned, modernized and updated at various stages.

The Theory of Machines

Physics and Technology

Physics : Textbook For Class Xi

Semiconductor Optoelectronics

Atmospheric Effects, Satellite Link Design and System Performance

Standard Handbook of Machine Design

Volume is indexed by Thomson Reuters BCI (WoS). A forum of researchers, educators and engineers involved in various aspects of Machine Design provided the inspiration for this collection of peer-reviewed papers. The resultant

dissemination of the latest research results, and the exchange of views concerning the future research directions to be taken in this field will make the work of immense value to all those having an interest in the topics covered. The book reflects the cooperative efforts made in seeking out the best strategies for effecting improvements in the quality and the reliability of machines and machine parts and for extending their fields of application.

This is a revised edition emphasising the fundamental concepts and applications of strength of materials while intending to develop students' analytical and problem-solving skills. 60% of the 1100 problems are new to this edition, providing plenty of material for self-study. New treatments

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are given to stresses in beams, plane stresses and energy methods. There is also a review chapter on centroids and moments of inertia in plane areas; explanations of analysis processes, including more motivation, within the worked examples.

A real printed MCAT exam for practice test-taking.

Introduction to Electrical Engineering. (Third Edition).

Thomas' Calculus

Calculus

Intended as a textbook for “applied” or engineering thermodynamics, or as a reference for practicing engineers, the book uses extensive in-text, solved

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examples and computer simulations to cover the basic properties of thermodynamics. Pure substances, the first and second laws, gases, psychrometrics, the vapor, gas and refrigeration cycles, heat transfer, compressible flow, chemical reactions, fuels, and more are presented in detail and enhanced with practical applications. This version presents the material using SI Units and has ample material on SI conversion, steam tables, and a Mollier diagram. A CD-ROM, included with the print version of the text, includes a fully functional version of QuickField (widely used in industry), as

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well as numerous demonstrations and simulations with MATLAB, and other third party software. The comprehensive study of electric, magnetic and combined fields is nothing but electromagnetic engineering. Along with electronics, electromagnetics plays an important role in other branches. The book is structured to cover the key aspects of the course Electromagnetic Field Theory for undergraduate students. The knowledge of vector analysis is the base of electromagnetic engineering. Hence book starts with the discussion of vector analysis. Then it introduces the basic concepts of

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electrostatics such as Coulomb's law, electric field intensity due to various charge distributions, electric flux, electric flux density, Gauss's law, divergence and divergence theorem. The book continues to explain the concept of elementary work done, conservative property, electric potential and potential difference and the energy in the electrostatic fields. The detailed discussion of current density, continuity equation, boundary conditions and various types of capacitors is also included in the book. The book provides the discussion of Poisson's and Laplace's equations and their use in variety of practical

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applications. The chapter on magnetostatics incorporates the explanation of Biot-Savart's law, Ampere's circuital law and its applications, concept of curl, Stoke's theorem, scalar and vector magnetic potentials. The book also includes the concept of force on a moving charge, force on differential current element and magnetic boundary conditions. The book covers all the details of Faraday's laws, time varying fields, Maxwell's equations and Poynting theorem. Finally, the book provides the detailed study of uniform plane waves including their propagation in free space, perfect dielectrics, lossy

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dielectrics and good conductors. The book uses plain, lucid language to explain each topic. The book provides the logical method of explaining the various complicated topics and stepwise methods to make the understanding easy. The variety of solved examples is the feature of this book which helps to inculcate the knowledge of the electromagnetics in the students. Each chapter is well supported with necessary illustrations and self-explanatory diagrams. The book explains the philosophy of the subject which makes the understanding of the concepts very clear and makes the subject more

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interesting.