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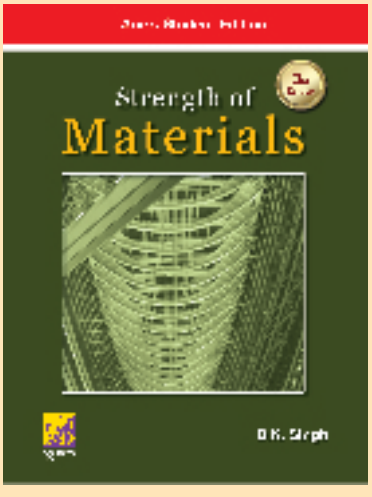
An Autonomous Institution under Govt. of NCT of Delhi and affiliated to University of Delhi, Netaji Subhas Institute of Technology is a seat of higher technical education in India. It was established in year 1983 as Delhi Institute of Technology with the objective to meet the growing demands of manpower in the emerging fields of engineering and technology with a close social and industrial interface. Over a period of time the Institute has carved a niche for itself, internationally, for excellence both nationally and in technical education and research.

Administrative autonomy was granted to the Institute in 1986. The Institute was registered as a Society in the name of "Delhi Institute of Technology" (DIT) on 12th June 1987 under the Societies Registration Act No. XXI of 1860 (Registration No. S-17742 of 1987). The Institute initiated Ph.D. programs in 1989. The Institute is affiliated to University of Delhi for all its UG, PG and Ph.D. programs.

From 1983 to till 1998, the Institute was operating from its old campus at old I.G. Block, Kashmere Gate, Delhi-110006. The Institute was formally inaugarated in its own new campus in Dwarka, New Delhi, 23rd January, 1997 by Sh. Atal Bihari Vajpayee, the former Prime Minister of India. The Institute was renamed as "Netaji Subhas Institute of Technology" (NSIT) in the year 1997 vide Gazette notification No. D.L. - 33002/97 dated 20.02.1997.



Strength of Materials
3/Ed

D.K. Singh

About the Book
In this third edition, the general arrangement of the book remains unchanged, but the text has been thoroughly revised alongwith adding several new solved problems in the chapters such as 1, 2, 5, 6, 7, 10 and 13. It continues to provide students with a sound understanding of the fundamental concepts of civil structures, machine elements and other components.

Contents
1. Simple Stresses and Strains 2. Principal Stresses 3. Centroid and Moment of Inertia 4. Shear Forces and Bending Moments in Beams 5. Stresses in Beams 6. Deflection of Beams 7. Torsion of Circular Members 8. Springs 9. Strain Energy 10. Theory of Elastic Failure 11. Buckling of Columns 12. Pressure Vessels 13. Analysis of Framed Structures 14. Mechanical Testing of Materials. Model Multiple Choice Questions for Competitive Examinations, Appendix-A, Appendix-B, Subject Index.

About the Author
D. K. Singh is the Associate Professor in the Division of Manufacturing Processes and Automation Engineering at Netaji Subhas Institute of Technology, University of Delhi, New Delhi. He has contributed over 35 papers to various national and international journals and conferences. He has also authored 11 books. His books are published from Ane Books India, CRC Press, USA (Taylor & Francis Group) and Pearson Education, Singapore. He isthe life member of the Indian Society for Technical Education (ISTE), New Delhi. He has been the visiting faculty at National Institute of Food Technology Entrepreneurship and Management (NIFTEM), Kundli (Sonepat), Haryana.

9788180521812 • 650 (Pb) • 2007 • ₹ 795.00

9789382127659 • 650 (Pb) • 2013 • ₹ 395.00

Strength of Materials

Problems and Solutions

D.K. Singh

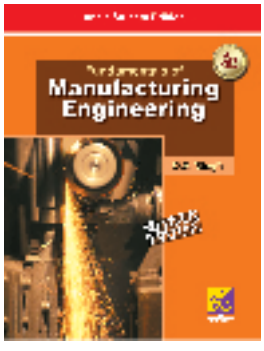
9789380618746 • 456 (Pb) • 2011 • ₹ 325.00

About the Book

This book covers all the important topics of Strength of Materials and presents the theory in brief having all the important concepts and formulae to solve the problems. It contains a large number of standard problems and their most appropriate solutions. The book can serve as a tutor at home.

Contents

1. Simple Stresses and Strains 2. Analysis of Framed Structures 3. Centroid and Moment of Inertia 4. Principal Stresses 5. Stresses in Beams 6. Strain Energy and Theory of Elastic Failure 7. Shear Forces and Bending Moments in Beams 8. Deflection of Beams 9. Torsion of Circular Members 10. Springs 11. Columns 12. Pressure Vessels, Appendix A, Appendix B



Fundamentals of Manufacturing Engineering

2/Ed

D.K. Singh

9789380156002 • 616 (Pb) • 2013 • ₹ 375.00

About the Book

Addition of a new 'Manufacturing Tools and Workshop Applications' and thorough revision has made the book more useful and defect-free. The additional chapter discusses workshop applications of manufacturing engineering. The book is useful for undergraduate students of all disciplines of engineering and postgraduate students of Mechanical, Industrial and Production engineering. It is equally suitable for those preparing for competitive examinations such as Civil Services, Engineering Services, GATE and Public Sector Undertakings.

Contents

1. Introduction to Materials and their Properties 2. Ferrous Materials and their Heat Treatment 3. Nonferrous Materials and their Heat Treatment 4. Non conventional Materials 5. Introduction to Casting 6. Casting Processes 7. Design Considerations in Casting 8. Introduction to Joining Processes 9. Gas Welding Processes 10. Arc Welding Processes 11. Solid State Welding Processes 12. Resistance Welding Processes 13. Modern Welding Processes 14. Soldering, Brazing and Adhesive Bonding 15. Design Considerations in Joining Processes 16. Theory of Metal Cutting 17. Machining Operations 18. Cutting Tool Materials 19. Forming Operations 20. Nonconventional Machining Operations 21. Powder Metallurgy 22. Metrology 23. Manufacturing Tools and Workshop Applications Bibliography, Index.

Just in Time

Concept and Practices

D.K. Singh

9788180521393 • 168 (Hb) • 2009 • ₹ 595.00

About the Book

The aim of the book is to enrich the knowledge on JIT through extensive reporting of empirical research and practices. JIT is an important tool to improve the operational efficiency of an organization. It ensures total customer satisfaction by providing customized products to a customer at the right time.

An essential read for all levels of management, especially in manufacturing units; this book offers a radically different approach, needed to give strategic advantage to a company, through the use of JIT and making it to uniquely stand in the global market.

Contents

Preface 1. Introduction to JIT 2. Quality Management and JIT 3. Manufacturing Environment and JIT 4. Automation and JIT Manufacturing 5. Customer Satisfaction and JIT 6. World-class Manufacturing and JIT 7. Information Technology and JIT 8. Kaizen Principle and JIT 9. Indian Industries and JIT, Subject Index.

Manufacturing Technology

D.K. Singh

9789381162385 • 230 (Pb) • 2012 • ₹ 180.00

About the Book

This book is intended as a textbook for basic course on manufacturing processes for all engineering students, but it is especially meant for the undergraduate students of Uttar Pradesh Technical University (UPTU) belonging to the disciplines of mechanical, production, chemical, computer science, electronics, instrumentation, information technology and others. It covers topics on materials and various manufacturing processes—casting, forming, machining and joining, besides others.

Contents

1. Introduction to Materials and their Properties 2. Ferrous Materials and their Heat Treatment 3. Nonferrous Materials 4. Non-metallic Materials 5. Metal Forming 6. Casting Operation 7. Machining Operations 8. Joining Processes 9. Production System 10. Plant Location and Layout 11. Miscellaneous Processes, Bibliography, Index

Elements of Mechanical Engineering

D.K. Singh

9789381162378 • 508 (Pb) • 2012 • ₹ 325.00

About the Book

This book caters to the need of Mechanical and Production Engineering students. It contains topics from Manufacturing Engineering, Strength of Materials, Engineering Mechanics, Internal Combustion (IC) Engines and Properties of Steam. The book can be used as a textbook and can also be useful for competitive examinations.

Contents

1. Force System and Analysis 2. Friction 3. Shear Forces and Bending Moments in Beams 4. Pure Bendings of Beams 5. Principal Stresses 6. Torsion of Circular Shaft 7. Framed Structures 8. Strain Energy 9. Basics of Thermodynamics 10. Laws of Thermodynamics 11. Internal Combustion Engines 12. Properties of Steam and Rankine Cycle 13. Introduction to Casting 14. Casting Processes 15. Joining Processes 16. Theory of Metal Cutting 17. Machining Operations 18. Nonconventional Machining Operations 19. Forming Operations, Bibliography, Index.

Multiple Choice Questions in Mechanical Engineering

D.K. Singh

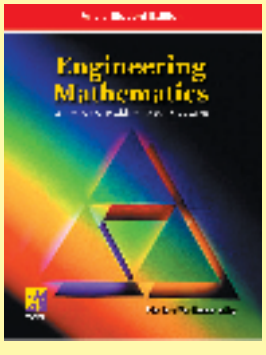
9789381162699 • 595 (Pb) • 2012 • ₹ 395.00

About the Book

The book on Multiple Choice Questions in Mechanical Engineering is meant for the students of Mechanical, Production and Industrial engineering, who are preparing for competitive and qualifying examinations such as Engineering Services, Civil Services, GATE and Public Sector Undertakings. It contains about 3000 selected objective questions covering the entire subjects of Mechanical engineering.

Contents

1.Engineering Mechanics 2.Strength of Materials 3. Fluid Power Engineering 4. Thermodynamics 5. Theory of Machines 6. Machine Design 7. Materials Science and Engineering 8. Production Engineering 9. Internal Combustion (IC)Engines 10. Refrigeration and Air Conditioning 11. Power Plant Engineering 12. Industrial Engineering and Management.



Engineering Mathematics

A Project & Problem Based Approach

Harish Parthasarathy

9789380618289 • 985 (Pb) • 2010 • ₹ 595.00

9788180521140 • 985 (Hb) • 2006 • ₹ 1495.00

About the Book

This is book on Engineering Mathematics covers all the standard material as outined in Kreyszig's book and as perceived by the author. In addition, this also contains a stream of examples taken from the physical sciences like classical mechanics, fluid dynamics, electromagnetics, quantum mechanics and the general theory of relativity. It will be of particular use to the undergraduate student who after having studied Kreyszig's book is looking for research problems where these methods can be applied. Postgraduate students and research workers in engineering and physics will find the book useful as a handy reference.

Contents

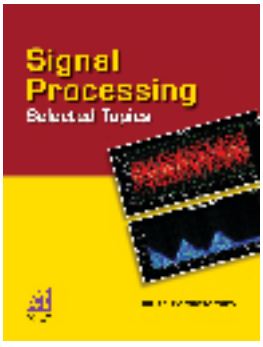
Acknowledgements, Preface, 1 The Derivative and the Integral, 2 Ordinary Differential equations, 3 Solved Examples, 4 Solved examples, 5 Linear algebra and matrix theory, 6 Fourier series and transforms, 7 Partial differential equations, 8 Functions of a complex variable, 9 Laplace transforms, 10 Vector algebra, 11 Vector calculus, 12 Probability theory and statistics, 13 Riemannian geometry and tensor calculus, 14 Selected topics in Group theory with applications, 15 Perturbation theory for differential equations, 16 Calculus of variations, 17 Stochastic filtering theory, 18 Generalized functions, 19 Simulation of analog systems on the digital computer, 20 Basic Circuit and System theory, 21 MATLAB Exercises, 22 Appendix:Reprints of some technical reports from DSP lab at NSIT, 23 Miscellaneous solved and unsolved problems in engineering mathematics, Bibliography, Index.

About the Author

An IIT Kanpur graduate, **Dr. Harish Parthasarathy** completed his research at IIT Delhi in the field of Design of Algorithm for Nonlinear Spectral Analysis of Signals. Thereafter the author worked as a post-doctoral visiting fellow at the Indian Institute of Astrophysics, Bangalore.

The author started his illustrious teaching career as Assistant Professor at IIT, Bombay where he taught an undergraduate course on Circuits and Systems and a post-graduate course on Adaptive filters. As a visiting faculty at the IIT, Kanpur, he taught a post-graduate course on antenna analysis & synthesis besides tutoring an undergraduate course on linear algebra with adaptive filter applications.

Since 2000 Dr. Parthasarathy, Asst. Professor, is teaching undergraduate courses on Circuits and Systems and Electromagnetic theory and a postgraduate course on digital and statistical signal processing at Netaji Subhas Institute of Technology (NSIT), New Delhi



Signal Processing

Selected Topics

Harish Parthasarathy

9789382127857 • 516 (Hb) • 2013 • ₹ 1995.00

About the Book

This book discusses some of the important modern problems in signal processing. These topics are (1) Group theory and image processing in which the theory of group representations is applied to estimate how an image gets transformed when a noisy version of the transformed image is measured. (2) Quantum signal processing in which design of quantum gates by perturbing physical systems like atoms and oscillators with random forces like electromagnetic fields is discussed. The Heisenberg and Schrodinger equations for quantum systems in noise are also discussed with application to estimating the parameters of the Hamiltonian. Box quantization of fields is also discussed in this chapter. (3) Large deviation theory, in which asymptotic probabilities of rare events are computed using Cramers idea of rate functions. The rate functions of various random variables and processes are computed in this chapter. These rate functions enable us to compute probabilities of events like escape of a dynamical system perturbed by low amplitude noise from a boundary. The Gartner-Ellis theorem and Varadhans integral lemma are discussed the latter being a useful tool for computing the partition function in statistical mechanics at low temperatures. (4) Nonlinear and random problems in circuit theory are discussed using a perturbation theoretic approach. These are applied to transistor and diode circuits. The stochastic differential equation approach has been emphasized here. We have also considered frequency domain analysis of nonlinear systems. Some problems in hydrodynamics have been discussed like how a galactic patch moving according to the Navier-Stokes equation emits Doppler shifted radiation. Finally, problems in Einsteins general theory of relativity when the metric is randomly perturbed have been discussed.

These include statistical properties of geodesics in a random metric, statistical properties of electromagnetic radiation in in a random metric, global positioning systems in a gravitational field etc. The last part of the book is based on projects related to the text material conducted by the authors B.E., M.Tech and Ph.D students.

Contents

1. Applications of Group Representations to Image Processing 2. Quantum Signal Processing 3. Large Deviations 4. Stochastic Problems 5. Stochastic Problems in General Relativity 6. Projects for computer simulation

Signal Processing

Application In
Physical Models

Harish Parthasarathy

9788180520938 • 572 (Pb) • 2006 • ₹ 795.00

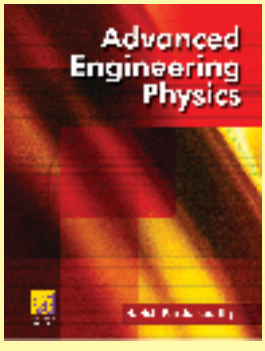
About the Book

This book should be regarded as a natural extension of the course "Signal and Systems" as taught in the undergraduate engineering curriculum in all colleges in the country and abroad. In signals and systems, we are taught how to model systems using linear ordinary differential and differences equations with constant coefficients. This book extends this circle of ideas by introducing systems in physics that are modeled using partial differential equations, and nonlinear differential equations having possibly time varying coefficients and also stochastic differential equations involving nonlinear systems with random inputs. The physical systems that are modeled using nonlinear ordinary differential equations are those arising in classical mechanics, namely the Newtonian laws of motion. The systems involving the use of partial differential equations are those arising in electrodynamics, fluid dynamics quantum mechanics and general relativity. The systems involving the use of stochastic differential equations are primarily mechanical systems perturbed by noise. Numerical techniques developed for the solution of nonlinear ordinary and partial differential equations lead to difference equations.

The undergraduate student after attending the course on signals and systems will be in a position to read this book and embar upon research in this wide field. The book can be used even by applied mathematicians who are looking for problems in physics where they can apply the theory of differential equations.

Contents

1. Physical Systems 2. Signal and System Theory 3. Some tools for Signal theory



Advanced Engineering Physics

Harish Parthasarathy

9788180522512 • 710 (Pb) • 2009 • ₹ 595.00

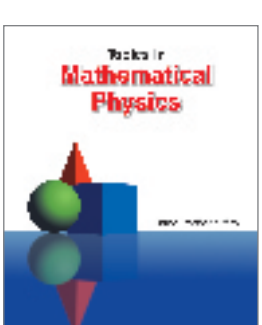
9788180520921 • 710 (Hb) • 2006 • ₹ 995.00

About the Book

This book is intended partly to serve as a textbook cum reference for the course Engineering Physics taught at the undergraduate level in engineering colleges all over the country. The other purpose of the book is to serve as a reference book for research workers in theoretical physics and signal processing. The chapters of the book cover almost all the major disciplines in theoretical physics with an additional engineering flavour introduced via study projects. These projects will be of use to research workers in analog and digital signal processing who are interested in applying signal processing methods to physical problems. The material of the book is based partly on the theoretical physics volumes of Landau and Lifschitz and partly on the projects guided by the author in the electronics engineering department where he is currently working. The basic methodology employed by the author in this book is to describe the physical model via ordinary or partial differential equations and then show illustrate how digital signal processing techniques based on discretization of derivatives and partial derivatives can be applied to such models.

Contents

1.Mechanics 2.Fluid Dynamics 3.ElectroMagnetics 4.Relativity 5.Quantum Mechanics 6.Circuit Theory 7.Optics 8.Solid State Physics 9.Digital Signal Processing 10.Probability 11.Statistical Physics =, Bibliography, Index.



Topics in Mathematical Physics

Harish Parthasarathy

9788180521843 • 768 (Hb) • 2007 • ₹ 995.00

About the Book

There exist several textbooks and research monographs on mathematical physics but this book stands out as it unifies mathematical physics with engineering applications by including topics such as Random Processes in addition to physical interpretations of mathematical models. The development of mathematical tools as well as their application to the solution of physical and engineering problems go hand in hand in this book.

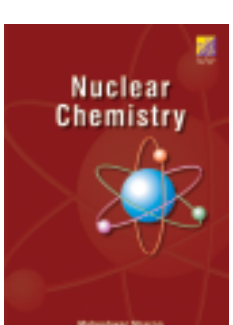
The topics covered in this book include Circuit Theory and Nonlinear Systems, Random Processes, Differential Equations, Classical Mechanics, Quantum Mechanics, Fluid Dynamics, Electrodynamics, relativity general signal theory and group theory. The selection of problems in each section illustrates how the mathematical techniques developed in the sequel under topics like Differential Equations and group theory are applied to problems in theoretical physics and engineering. DSP implementations of equations occurring in theoretical physics has also been given some weightage in this book.

In the sections on Random Processes and Signal Theory, Theory of Nonlinear Filtering has been introduced besides including more elementary properties of random variables and random processes and tools like the characteristic function and moment generating function for analyzing random phenomena. "

In the section on Quantum Mechanics, Quantum Stochastic Calculus has been introduced. DSP implementations of the Schrodinger wave equation and relativistic wave equations in an electromagnetic field are also discussed.

Some other features of this book include a good discussion of the Kerr Metric corresponding to a rotating blackhole, methods for implementing algorithms of quantum computation and quantum information using MATLAB, basic problems of quantum scattering theory and stochastic processes in fluid dynamics. It is hoped that this book will be welcomed by undergraduates who are stepping into postgraduate research as well as by professional researchers in the field of theoretical physics and engineering.

Contents



Nuclear Chemistry

Maheshwar Sharon
IIT, Bombay
Madhuri Sharon Sharon

Indian Sub-continent: Ane Books
Rest of the World: CRC Press

About the Book

This book will be useful for the Engineering and Science graduates, postgraduates and researchers of various universities in India and abroad. This book concentrates on the techniques concerned with the detection and measurement of radioactivity. In order to appreciate the subject, law of decay of radioactivity, type of decay, interaction of radiation with matter are dealt with appropriately. It brings the difference between ionization counter, scintillation counter and solid state detector. Statistics of counting is enumerated and effort is made to make the reader aware that there is a difference between an ordinary chemical laboratory and a radiochemical one. At the end various possible problems related to counting are mentioned.

9788190840668 • 244 (Hb) • 2009 • ₹ 795.00

Bio-Nanotechnology

Concepts and Applications

Madhuri Sharon
Maheshwar Sharon
IIT, Bombay
Sunil Pandey
Goldie Oza

Indian Sub-continent: Ane Books
Rest of the World: CRC Press

9789380618715 • 405 (Hb) • 2012 • ₹ 1495.00

About the Book

This book is a humble attempt towards sharpening the knowledge of undergraduates, postgraduates and all researchers who are interested in pursuing their research in the field of Bio-Nanotechnology. It focuses on fundamental Bionanomachines and their applications.

The book begins with the explanations that Nanotechnologies fall between the usual daily macrophysics and the quantum mechanics and covers their unique properties. Then it encompasses the domain of Biological system that efficiently functions at nano-scale using various biological nano-machines and custom made molecules. Fundamentals and applications of noble metal nanoparticles nano-engineered by different living systems and an up-to-date review of how DNA, RNA and proteins are so stable in a milieu fully crowded with other smaller organic and inorganic molecules, how molecular crowding endorses self assembly are presented in detail. The book also covers various aspects of carbon nanomaterials.

The highlight of the book is the fundamental philosophy in manoeuvring artificial intelligent machines capable of following electronic instruction. Birth of nanorobots using natural spare parts and their organization into a functional machine is main attribute of this book. It is an all embracing introduction to use of nanoscale architecture in medicine, environmental remediation, utilization of food, agriculture, cosmetics and synthetic nano-implants.

About Authors

Dr. Madhuri Sharon an eminent Bionanotechnologist, is currently Executive Director of N.S.N. Research Centre for Nanotechnology and Bionanotechnology; and Principal of SICES College of Arts, science & Commerce, Mumbai. She is also the Director of Monad Nanotech Pvt.Ltd., which is the only company producing Carbon Nanomaterials in India.

Prof. Maheshwar Sharon Retd Prof. of IIT Bombay, Emeritus Professor (U.G.C. and C.S.I.R.);is currently the Director of N.S.N. Research Centre for Nanotechnology and Bionanotechnology. He is an authority on Carbon Nanotechnology and fellow of the Royal Society of Chemistry, London (1968-2003).

Sunil Pandey is a Scientist in N. Shankaran Nair Research Centre. He is also working as a Lecturer in SICES Degree College. He is working on Biosynthesis of metal nanoparticles and their applications in delivery of anti cancerous drugs.

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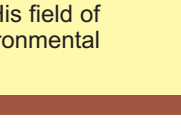
Invitation to Authors



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