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### Modern physics

## Modern Physics, 18th Edition

*S. Chand Publishing* The eighteenth edition of this well-known textbook continues to provide a thorough understanding of the principles of modern physics. It offers a detailed presentation of important topics such as atomic physics, quantum mechanics, nuclear physics, solid state physics and electronics. The concepts are exhaustively presented with numerous examples and diagrams which would help the students in analysing and retaining the concepts in an effective manner. This textbook is a useful resource for undergraduate students and will also serve as a reference text for postgraduate students.

## Allied Physics Paper I & II

*S. Chand Publishing Paper-I* | Waves & Oscillations | Properties Of Matters | Thermal Physics | Electricity And Magnetism | Geometrical Optics | Paper-II | Physical Optics | Atomic Physics | Nuclear Physics | Elements Of Relativity And Uantum Mechanics | Electronics Practical Physics | Young'S Modulus By Non-Uniform Bending | Young'S Modulus (E) Non-Uniform Bending | Rigidity Modulus (Static Torsion Method)|Rigidity Modulus By Tosicenal Oscillations | Surface Tension And Interfacial Surface Tension Drop Weight Method | Comparison Of Viscosities Of Two Liquids—Burette Method | Specific Heat Capacity Of A Liquid | Sonometer— Frequency Of A.C. Mains | Determination Of Radius Of Curvature | Air Wedge — Thickness Of A Wire | Spectrometer-Diffraction On Gravity- Wevelength Of Hg Lines | Potentiometer-Voltmeter Calibration | Post Office Box-Measure Of Resistance And Specific Resistance | Ballistic Galvanometer Figure Of Merit | Logic Gates And, Or, Not | Zener Diode Characteristics | Nand Gate As A Universal Gate

### Modern Physics

## Modern Physics

*S. Chand Publishing* The present Multicolor edition has been thoroughly revised and update taking into account the recent syllabi of various Indian Universities.Multicolor pictures have been added to enhance the content value and to give the students an idea of what he will be dealing in reality,and to bridge the gap between theory and practice.

## Properties of Matter

*S. Chand Publishing* This book has been written for the students of B.Sc Physics of Various Indian Universities.

## Optics and Spectroscopy

*S. Chand Publishing* This book has been written for the students of B.Sc., Physics of various Indian Universities. The book covers the syllabi, prescribed by Madras, Bharathiyar, Bharathidhasan, Madurai Kamaraj and Manonmaniam Sundaranar Universities. SI System of Units has been used throughout the text. Proper care has been taken in dealing with the subject with modern outlook. A large number of questions and problems have been given at the end of each Chapter. Students should attempt to tackle them properly for better insight and understanding of the subject.

## 1000 Solved Problems in Modern Physics

*Springer Science & Business Media* This book is targeted mainly to the undergraduate students of USA, UK and other European countries, and the M. Sc of Asian countries, but will be found useful for the graduate students, Graduate Record Examination (GRE), Teachers and Tutors. This is a by-product of lectures given at the Osmania University, University of Ottawa and University of Tebrez over several years, and is intended to assist the students in their assignments and examinations. The book covers a wide spectrum of disciplines in Modern Physics, and is mainly based on the actual examination papers of UK and the Indian Universities. The selected problems display a large variety and conform to syllabi which are currently being used in various countries. The book is divided into ten chapters. Each chapter begins with basic concepts containing a set of formulae and explanatory notes for quick reference, followed by a number of problems and their detailed solutions. The problems are judiciously selected and are arranged section-wise. The so- tions are neither pedantic nor terse. The approach is straight forward and step-- step solutions are elaborately provided. More importantly the relevant formulas used for solving the problems can be located in the beginning of each chapter. There are approximately 150 line diagrams for illustration. Basic quantum mechanics, elementary calculus, vector calculus and Algebra are the pre-requisites.

## Properties Of Matter And Acoustic

*S. Chand Publishing* This book is written to meet the requirements of first semester B.Sc. Physics Major Students of Madras University, Chennai, Tamil Nadu. The subject matter in this book has been astutely developed keeping in view the actual difficulties faced by the students who hail mostly from rural areas of Tamil Nadu.

## Introduction to Fiber-Optic Communications

*Academic Press* Introduction to Fiber-Optic Communications provides students with the most up-to-date, comprehensive coverage of modern optical fiber communications and applications, striking a fine balance between theory and practice that avoids excessive mathematics and derivations. Unlike other textbooks currently available, this book covers all of the important recent technologies and developments in the field, including electro-optic modulators, coherent optical systems, and silicon integrated photonic circuits. Filled with practical, relevant worked examples and exercise problems, the book presents complete coverage of the topics that optical and communications engineering students need to be successful. From principles of optical and optoelectronic components, to optical transmission system design, and from conventional optical fiber links, to more useful optical communication systems with advanced modulation formats and high-speed DSP, this book covers the necessities on the topic, even including today's important application areas of passive optical networks, datacenters and optical interconnections. Covers fiber-optic communication system fundamentals, design rules and terminologies Provides students with an understanding of the physical principles and characteristics of passive and active fiber-optic components Teaches students how to perform fiber-optic system design, performance evaluation and troubleshooting Includes modern advances in modulation and decoding strategies

## Electricity and Magnetism, 10th Edition

*S. Chand Publishing* Electricity and Magnetism

## MODERN PHYSICS

*PHI Learning Pvt. Ltd.* This comprehensive and well-written book provides a thorough understanding of the principles of modern physics, their relations, and their applications. Most of the developments in physics that took place during the twentieth century are called "modern"-something to be treated differently from the "classical" physics. This book offers a detailed presentation of a wide range of interesting topics, starting from the special theory of relativity, basics of quantum mechanics, atomic physics, spectroscopic studies of molecular structures, solid state physics, and proceeding all the way to exciting areas such as lasers, fibre optics and holography. An in-depth treatment of the different aspects of nuclear physics focuses on nuclear properties, nuclear models, fission, fusion, particle accelerators and detectors. The book concludes with a chapter on elementary interactions, symmetries, conservation laws, the quark model and the grand unified theory. Clear and readable, this book is eminently suitable as a text for B.Sc. (physics) course.

## Introduction to Nuclear and Particle Physics

*World Scientific* ' The original edition of Introduction to Nuclear and Particle Physics was used with great success for single-semester courses on nuclear and particle physics offered by American and Canadian universities at the undergraduate level. It was also translated into German, and used overseas. Being less formal but well-written, this book is a good vehicle for learning the more intuitive rather than formal aspects of the subject. It is therefore of value to scientists with a minimal background in quantum mechanics, but is sufficiently substantive to have been recommended for graduate students interested in the fields covered in the text. In the second edition, the material begins with an exceptionally clear development of Rutherford scattering and, in the four following chapters, discusses sundry phenomenological issues concerning nuclear properties and structure, and general applications of radioactivity and of the nuclear force. This is followed by two chapters dealing with interactions of

particles in matter, and how these characteristics are used to detect and identify such particles. A chapter on accelerators rounds out the experimental aspects of the field. The final seven chapters deal with elementary-particle phenomena, both before and after the realization of the Standard Model. This is interspersed with discussion of symmetries in classical physics and in the quantum domain, bringing into full focus the issues concerning CP violation, isotopic spin, and other symmetries. The final three chapters are devoted to the Standard Model and to possibly new physics beyond it, emphasizing unification of forces, supersymmetry, and other exciting areas of current research. The book contains several appendices on related subjects, such as special relativity, the nature of symmetry groups, etc. There are also many examples and problems in the text that are of value in gauging the reader's understanding of the material. Contents: Rutherford Scattering Nuclear Phenomenology Nuclear Models Nuclear Radiation Applications of Nuclear Physics Energy Deposition in Media Particle Detection Accelerators Properties and Interactions of Elementary Particles Symmetries Discrete Transformations Neutral Kaons, Oscillations, and CP Violation Formulation of the Standard Model Standard Model and Confrontation with Data Beyond the Standard Model Readership: Advanced undergraduates and researchers in nuclear and particle physics. Keywords: Rutherford Scattering; Nuclear Properties; Nuclear Structure; Elementary Particles; Sub-Structure of Particles; Particle Detectors; Interactions in Matter; The Standard Model; Symmetries of Nature; Theories of Nuclear and Particle Structure; Radioactivity; Supersymmetry Reviews: "The book by Das and Ferbel is particularly suited as a basis for a one-semester course on both subjects since it contains a very concise introduction to those topics and I like very much the outline and contents of this book." Kay Konigsmann Universität Freiburg, Germany "The book provides an introduction to the subject very well suited for the introductory course for physics majors. Presentation is very clear and nicely balances the issues of nuclear and particle physics, exposes both theoretical ideas and modern experimental methods. Presentation is also very economic and one can cover most of the book in a one-semester course. In the second edition, the authors updated the contents to reflect the very recent developments in the theory and experiment. They managed to do it without substantial increase of the size of the book. I used the first edition several times to teach the course 'Introduction to Subatomic Physics' and I am looking forward to use this new edition to teach the course next year." Professor Mark Strikman Pennsylvania State University, USA "This book can be recommended to those who find elementary particle physics of absorbing interest." Contemporary Physics '

## Schaum's Outline of Quantum Mechanics, Second Edition

McGraw Hill Professional Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately for you, 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 examples with explanations of quantum mechanics concepts Exercises to help you test your mastery of quantum mechanics Complete review of all course fundamentals Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time--and get your best test scores! Topics include: Mathematical Background; Schrodinger Equation and Applications; Foundations of Quantum Mechanics; Harmonic Oscillator; Angular Momentum; Spin; Hydrogen-Like Atoms; Particle Motion in an Electromagnetic Field; Solution Methods in Quantum Mechanics; Solutions Methods in Quantum Mechanics; Numerical Methods in Quantum Mechanics; Identical Particles; Addition of Angular Momenta; Scattering Theory; and Semiclassical Treatment of Radiation Schaum's Outlines--Problem Solved.

## Modern Physics

Worth Pub For the intermediate-level course, the Fifth Edition of this widely used text takes modern physics textbooks to a higher level. With a flexible approach to accommodate the various ways of teaching the course (both one- and two-term tracks are easily covered), the authors recognize the audience and its need for updated coverage, mathematical rigor, and features to build and support student understanding. Continued are the superb explanatory style, the up-to-date topical coverage, and the Web enhancements that gained earlier editions worldwide recognition. Enhancements include a streamlined approach to nuclear physics, thoroughly revised and updated coverage on particle physics and astrophysics, and a review of the essential Classical Concepts important to students studying Modern Physics.

## Nuclear and Particle Physics

### An Introduction

John Wiley & Sons An accessible introduction to nuclear and particle physics with equal coverage of both topics, this text covers all the standard topics in particle and nuclear physics thoroughly and provides a few extras, including chapters on experimental methods; applications of nuclear physics including fission, fusion and biomedical applications; and unsolved problems for the future. It includes basic concepts and theory combined with current and future applications. An excellent resource for physics and astronomy undergraduates in higher-level courses, this text also serves well as a general reference for graduate studies.

## Protecting Information

### From Classical Error Correction to Quantum Cryptography

Cambridge University Press For many everyday transmissions, it is essential to protect digital information from noise or eavesdropping. This undergraduate introduction to error correction and cryptography is unique in devoting several chapters to quantum cryptography and quantum computing, thus providing a context in which ideas from mathematics and physics meet. By covering such topics as Shor's quantum factoring algorithm, this text informs the reader about current thinking in quantum information theory and encourages an appreciation of the connections between mathematics and science. Of particular interest are the potential impacts of quantum physics: (i) a quantum computer, if built, could crack our currently used public-key cryptosystems; and (ii) quantum cryptography promises to provide an alternative to these cryptosystems, basing its security on the laws of nature rather than on computational complexity. No prior knowledge of quantum mechanics is assumed, but students should have a basic knowledge of complex numbers, vectors, and matrices.

## Modern Electrochemical Methods in Nano, Surface and Corrosion Science

BoD - Books on Demand The basics and principles of new electrochemical methods and also their usage for fabrication and analysis of different nanostructures were discussed in this book. These methods consist of electrochemical methods in nanoscale (e.g. electrochemical atomic force microscopy and electrochemical scanning tunneling microscopy) and also electrochemical methods for fabrication of nanomaterials.

## Digital Electronics

### Principles, Devices and Applications

John Wiley & Sons 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 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-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.

## Harnessing Green IT

### Principles and Practices

John Wiley & Sons "Ultimately, this is a remarkable book, a practical testimonial, and a comprehensive bibliography rolled into one. It is a single, bright sword cut across the various murky green IT topics. And if my mistakes and lessons learned through the green IT journey are any indication, this book will be used every day by folks interested in greening IT." — Simon Y. Liu, Ph.D. & Ed.D., Editor-in-Chief, IT Professional Magazine, IEEE Computer Society, Director, U.S. National Agricultural Library This book presents a holistic perspective on Green IT by discussing its various facets and showing how to strategically embrace it. Harnessing Green IT: Principles and Practices examines various ways of making computing and information systems greener - environmentally sustainable -, as well as several means of using Information Technology (IT) as a tool and an enabler to improve the environmental sustainability. The book focuses on both greening of IT and greening by IT - complimentary approaches to attaining environmental sustainability. In a single volume, it comprehensively covers several key aspects of Green IT - green technologies, design, standards, maturity models, strategies and adoption -, and presents a clear approach to greening IT encompassing green use, green disposal, green design, and green manufacturing. It also illustrates how to strategically apply green IT in practice in several areas. Key Features: Presents a comprehensive coverage of key topics of importance and practical relevance - green technologies, design, standards, maturity models, strategies and adoption Highlights several useful approaches to embracing green IT in several areas Features chapters written by accomplished experts from industry and academia who have first-hand knowledge and expertise in specific areas of green IT Presents a set of review and discussion questions for each chapter that will help the readers to examine and explore the green IT domain further Includes a companion website providing resources for further information and presentation slides This book will be an invaluable resource for IT Professionals, academics, students, researchers, project leaders/managers, IT business executives, CIOs, CTOs and anyone interested in Green IT and harnessing it to enhance our environment.

## Quantum Mechanics

### A Modern and Concise Introductory Course

*Springer Science & Business Media* Starting from basic principles, the book systematically covers both Heisenberg and Schrödinger realizations of quantum mechanics (in this order). It provides excellent didactic introduction to the essential principles and treats recent concepts such as entanglement and decoherence. The book gives the background needed to understand quantum cryptography, teleportation and computation, and it is especially suitable for introducing the spin. This second edition includes a more friendly presentation to Hilbert spaces, and more practical applications e.g. scanning tunneling microscope (potential barrier).

### Fundamentals of Communication Systems

*For one- or two-semester, senior-level undergraduate courses in Communication Systems for Electrical and Computer Engineering majors.* This text introduces the basic techniques used in modern communication systems and provides fundamental tools and methodologies used in the analysis and design of these systems. The authors emphasize digital communication systems, including new generations of wireless communication systems, satellite communications, and data transmission networks. A background in calculus, linear algebra, basic electronic circuits, linear system theory, and probability and random variables is assumed.

### Elements of Properties of Matter

*S. Chand Publishing* The book is a comprehensive work on Properties of Matter which introduces the students to the fundamentals of the subject. It adopts a unique 'ab initio' approach to the presentation of matter- solids, liquids and gasses- with extensive usage of Calculus throughout the book. For each topic, the focus is on optimum blend of theory as well as practical application. Examples and extensive exercises solved with the logarithms reinforce the concepts and stimulate the desire among users to test how far they have grasped and imbibed the basic principles. It primarily caters to the undergraduate courses offered in Indian universities.

### Introduction to Modern Solid State Physics

So, we see that in the acoustic mode all the atoms move next to synchronously, like an acoustic wave in homogeneous medium. Contrary, in the optical mode; the gravitycenter remains unperturbed. In an ionic crystal such a vibration produce alternating dipole moment. Consequently, the mode is optically active

### Stellar Structure and Evolution

*Springer Science & Business Media* A complete and comprehensive treatment of the physics of the stellar interior and the underlying fundamental processes and parameters. The text presents an overview of the models developed to explain the stability, dynamics and evolution of the stars, and great care is taken to detail the various stages in a star's life. The authors have succeeded in producing a unique text based on their own pioneering work in stellar modeling. Since its publication, this textbook has come to be considered a classic by both readers and teachers in astrophysics. This study edition is intended for students in astronomy and physics alike.

### Modern Physics

*Macmillan Tipler and Llewellyn's* acclaimed text for the intermediate-level course (not the third semester of the introductory course) guides students through the foundations and wide-ranging applications of modern physics with the utmost clarity--without sacrificing scientific integrity.

### Physics for Degree Students for B.Sc. 3rd Year

*S. Chand Publishing* Section I Relativity Section II Quantum Mechanics Section III Atomic Physics Section IV Molecular Physics Section V Nuclear Physics Section VI Solid State Physics Section VII Solid State Devices Section VIII Electronics Index

### Welding Metallurgy

*John Wiley & Sons* Updated to include new technological advancements in welding Uses illustrations and diagrams to explain metallurgical phenomena Features exercises and examples An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

### FUNDAMENTALS OF PHYSICS, 6TH ED

*John Wiley & Sons* About The Book: No other book on the market today can match the success of Halliday, Resnick and Walker's Fundamentals of Physics! In a breezy, easy-to-understand style the book offers a solid understanding of fundamental physics concepts, and helps readers apply this conceptual understanding to quantitative problem solving. The extended edition provides coverage of developments in Physics in the last 100 years, including: Einstein and Relativity, Bohr and others and Quantum Theory, and the more recent theoretical developments like String Theory. This book offers a unique combination of authoritative content and stimulating applications.

### Open-Channel Microfluidics

### Fundamentals and Applications

*Morgan & Claypool Publishers* Open microfluidics, the study of microflows having a boundary with surrounding air, encompasses different aspects such as paper or thread-based microfluidics, droplet microfluidics and open-channel microfluidics. Open-channel microflow is a flow at the micro-scale, guided by solid structures, and having at least a free boundary (with air or vapor) other than the advancing meniscus. This book is devoted to the study of open-channel microfluidics which (contrary to paper or thread or droplet microfluidics) is still very sparsely documented, but bears many new applications in biology, biotechnology, medicine, material and space sciences. Capillarity being the principal force triggering an open microflow, the principles of capillarity are first recalled. The onset of open-channel microflow is next analyzed and the fundamental notion of generalized Cassie angle (the apparent contact angle which accounts for the presence of air) is presented. The theory of the dynamics of open-channel microflows is then developed, using the notion of averaged friction length which accounts for the presence of air along the boundaries of the flow domain. Different channel morphologies are studied and geometrical features such as valves and capillary pumps are examined. An introduction to two-phase open-channel microflows is also presented showing that immiscible plugs can be transported by an open-channel flow. Finally, a selection of interesting applications in the domains of space, materials, medicine and biology is presented, showing the potentialities of open-channel microfluidics.

### Electricity and Magnetism

*S. Chand Publishing* This tenth, extensively revised edition of Electricity and Magnetism continues to provide students a detailed presentation of the fundamental principles, synthesis and physical interpretation of electric & magnetic fields. It follows full vector treatment in discussing topics such as electrostatics, magnetostatics, DC circuits, AC circuits, electrodynamics and electromagnetic waves. While retaining its modern outlook to the subject, this new edition has been revised as per the latest syllabi of various universities. Students pursuing BSc Physics course would find this textbook extremely useful.

### Heat and Thermodynamics

### Nuclear Reactor Theory

In a part of North Africa where, within miles, the backdrop can change dramatically from snow-blasted mountains to wind-scoured dunes live the Berber people of the Atlas Mountains. In the third book of her trilogy on African women, world-renowned photojournalist Margaret Courtney-Clarke examines the difficult lives and remarkable arts of Berber women. As modern times and modern warfare in Algeria, Morocco, and Tunisia have encroached on their centuries-old traditions, Berber women have begun to give up the old ways. Imazighen: The Vanishing Traditions of Berber Women is a record of a quickly disappearing way of life. As in her earlier books, Ndebele: The Art of an African Tribe and African Canvas: The Art of West African Women, Courtney-Clarke succeeds in capturing the spirit of the women by experiencing their world from season to season and by respecting their values and traditions. Through photographs, interviews, and observations, Courtney-Clarke documents the Berber women as they stoically carry water and firewood on their backs for miles of rocky terrain. And she records the beauty they have magically produced in their lives - through their spinning and weaving and their carefully coiled pottery - a metaphor for survival and creativity. Geraldine Brooks, award-winning journalist and an expert on life in the Middle East, accompanied Courtney-Clarke on her last trip to North Africa, and has written moving, thoughtful essays on the struggle of existence among the Berbers. With a glossary of Berber terms and a detailed map of the region, this book is not only a handsomely illustrated volume of the triumph of the arts of the Berber women, but a dramatic record of a people yielding to the pressures of the twentieth century.

## Atomic and Nuclear Physics

*S. Chand Publishing* The present edition of the book is revised as per the UGC syllabus. Questions and problems at the end of each chapter have been up-dated. Many new solved examples are included in this edition. Certain topics have been added so that students from some universities where the syllabus has been modified and upgraded may benefit. Besides being a text book we hope that this benefits students appearing at the IAS, AMIE and other Competitive Examinations.

## Supernatural Access

## Remove Roadblocks in Order to Hear God and Receive Revelation

*Charisma Media* Sharpen your spiritual senses. God may be speaking in ways you don't expect.

## The Hydrogen Atom

## Precision Physics of Simple Atomic Systems

*Springer* For more than a century, studies of atomic hydrogen have been a rich source of scientific discoveries. These began with the Balmer series in 1885 and the early quantum theories of the atom, and later included the development of QED and the first successful gauge field theory. Today, hydrogen and its relatives continue to provide new fundamental information, as witnessed by the contributions to this book. The printed volume contains invited reviews on the spectroscopy of hydrogen, muonium, positronium, few-electron ions and exotic atoms, together with related topics such as frequency metrology and the determination of fundamental constants. The accompanying CD contains, in addition to these reviews, a further 40 contributed papers also presented at the conference "Hydrogen Atom 2" held in summer 2000. Finally, to facilitate a historical comparison, the CD also contains the proceedings of the first "Hydrogen Atom" conference of 1988. The book includes a foreword by Norman F. Ramsey.

## Modern Introductory Physics

*Springer Science & Business Media* This book grew out of an ongoing effort to modernize Colgate University's three-term, introductory, calculus-level physics course. The book is for the first term of this course and is intended to help first-year college students make a good transition from high-school physics to university physics. The book concentrates on the physics that explains why we believe that atoms exist and have the properties we ascribe to them. This story line, which motivates much of our professional research, has helped us limit the material presented to a more humane and more realistic amount than is presented in many beginning university physics courses. The theme of atoms also supports the presentation of more non-Newtonian topics and ideas than is customary in the first term of calculus-level physics. We think it is important and desirable to introduce students sooner than usual to some of the major ideas that shape contemporary physicists' views of the nature and behavior of matter. Here in the second decade of the twenty-first century such a goal seems particularly appropriate. The quantum nature of atoms and light and the mysteries associated with quantum behavior clearly interest our students. By adding and phasing more modern content, we seek not only to present some of the physics that engages contemporary physicists but also to attract students to take more physics. Only a few of our beginning physics students come to us sharply focused on physics or astronomy. Nearly all of them, however, have taken physics in high school and found it interesting.

## Nuclear Physics

## An Introduction

*New Age International* Dr. S. B. Patel is Professor of Physics, Bombay University. He has taught physics for more than twenty years at the B. Sc. and M. Sc. levels at Ramnarain Ruia College, Bombay. He earned his Ph. D. in Nuclear Physics from Tifr-Bombay University in 1976. Later he was involved in post-doctoral research at the Lawrence Berkeley Laboratory, California. His field of specialization is Nuclear Spectroscopy.

## Mechanics & Mathematical Methods ( Tamil Nadu)

## Reinforcement Learning, second edition

## An Introduction

*MIT Press* The significantly expanded and updated new edition of a widely used text on reinforcement learning, one of the most active research areas in artificial intelligence. Reinforcement learning, one of the most active research areas in artificial intelligence, is a computational approach to learning whereby an agent tries to maximize the total amount of reward it receives while interacting with a complex, uncertain environment. In *Reinforcement Learning*, Richard Sutton and Andrew Barto provide a clear and simple account of the field's key ideas and algorithms. This second edition has been significantly expanded and updated, presenting new topics and updating coverage of other topics. Like the first edition, this second edition focuses on core online learning algorithms, with the more mathematical material set off in shaded boxes. Part I covers as much of reinforcement learning as possible without going beyond the tabular case for which exact solutions can be found. Many algorithms presented in this part are new to the second edition, including UCB, Expected Sarsa, and Double Learning. Part II extends these ideas to function approximation, with new sections on such topics as artificial neural networks and the Fourier basis, and offers expanded treatment of off-policy learning and policy-gradient methods. Part III has new chapters on reinforcement learning's relationships to psychology and neuroscience, as well as an updated case-studies chapter including AlphaGo and AlphaGo Zero, Atari game playing, and IBM Watson's wagering strategy. The final chapter discusses the future societal impacts of reinforcement learning.