Discrete Mathematics Swapan Kumar Sarkar

Originally published in 2006, reissued as part of Pearson's modern classic series.

This book comprises previous question papers problems at appropriate places and also previous GATE questions at the end of each chapter for the benefit of the students

Presents the latest knowledge of improving the stress tolerance, yield, and quality of rice crops One of the most important cereal crops, rice provides food to more than half of the world population. Various abiotic stresses—currently impacting an estimated 60% of crop yields—are projected to increase in severity and frequency due to climate change. In light of the threat of global food grain insecurity, interest in molecular rice breeding has intensified in recent years. Progress has been made, but there remains an urgent need to develop stress-tolerant, bio-fortified rice varieties that provide consistent and high-quality yields under both stress and non-stress conditions. Molecular Breeding for Rice Abiotic Stress Tolerance and Nutritional Quality is the first book to provide comprehensive and up-to-date coverage of this critical topic, containing the physiological, biochemical, and molecular information required to develop effective engineering strategies for enhancing rice yield. Authoritative and in-depth chapters examine the molecular and genetic bases of abiotic stress tolerance, discuss yield and quality improvement of rice, and explore new approaches to better utilize natural resources through modern breeding. Topics Include rice adaptation to climate change, enriching rice yields under low phosphorus and light intensity, increasing iron, zinc, vitamin and antioxidant content, and improving tolerance to salinity, drought, heat, cold, submergence, heavy metals and Ultraviolet-B radiation. This important resource: Contains the latest scientific information on a wide range of topics central to molecular breeding for rice Provides timely coverage molecular breeding for improving abiotic stress tolerance, bioavailability of essential micronutrients, and crop productivity through biotechnological methods Features detailed chapters written by internationally-recognized experts in the field Discusses recent progress and future directions in molecular breeding strategies and research Molecular Breeding for Rice Abiotic Stress Tolerance and Nutritional Quality is required reading for rice researchers, agriculturists, and agribusiness professionals, and the ideal text for instructors and students in molecular plant breeding, abiotic stress tolerance, environmental science, and plant physiology, biochemistry, molecular biology, and biotechnology.

The Ideas of Discrete Mathematics are the fundamental to the science and technology specific to the computer age.thhis book is primarily designed to provied an introduction to some fundamental concepts in Discrete Mathematics for the students of graduate and postgraduate on computer science as well as the students of diploma and degree level in computer engineering.The students assigned with BCA and MCA Programs and IT related other professional courses may also be benefitted.

Provides a comprehensive coverage of the subject, Includes numerous illustrative example, Demonstrate the development of algorithms in a lucid manner, Demonstrate the implementation of algorithms in a good programming style, provides challenging programming exercise to test you knowledge gained about the subject, Glossary of terms for ready reference

Theory of Functions of a Complex Variable

Combinatorics and Graph Theory is designed as a textbook for undergraduate students of computer science and engineering and postgraduate students of computer applications. The book seeks to introduce students to the mathematical concepts needed to develop abstract thinking and problem solving—important prerequisites for the study of computer science. The book provides an exhaustive coverage of various concepts and remarkable introduction of several topics of combinatorics and graph theory. The book presents an informative exposure for beginners and acts as a reference for advanced students. It highlights comprehensive and rigorous views of combinatorics and graphs. The text shows simplicity and step-by-step concepts throughout and is profusely illustrated with diagrams. The real-world applications corresponding to the topics are appropriately highlighted. The chapters have also been interspersed throughout with numerous interesting and instructional notes. Written in a lucid style, the book helps students apply the mathematical tools to computer-related concepts and consists of around 600 worked-out examples which motivate students as a self-learning mode.KEY FEATURES Contains various exercises with their answers or hints. Lays emphasis on the applicability of mathematical structures to computer science. Includes competitive examinations' questions asked in GATE, NET, SET, etc

The book in its present form is due to my interaction with the students for quite a long time.It had been my long-cherished desire to write a book covering most of the topics that form the syllabii of the Engineering and Science students at the degree level.Many students,although able to understand the various topics of the books,may not be able to put their knowledge to use.For this purpose a number of questions and problems are given at the end of each chapter.

Provides computer science students with a foundation in discrete mathematics using relevant computer science applications.

This book is an attempt to make presentation of Elements of Real Analysis more lucid. The book contains examples and exercises meant to help a proper understanding of the text. For B.A., B.Sc. and Honours (Mathematics and Physics), M.A. and M.Sc. (Mathematics) students of various Universities/ Institutions.As per UGC Model Curriculum and for I.A.S. and Various other competitive exams.

This volume will be summarized on the basis of the topics of Ionic Liquids in the form of chapters and sections. It would be emphasized on the synthesis of ILs of different types, and stabilization of amphiphilic self-assemblies in conventional and newly developed ILs to reveal formulation, physicochemical properties, microstructures, internal dynamics, thermodynamics as well as new possible applications. It covers: Topics of ionic liquid assisted micelles and microemulsions in relation to their fundamental characteristics and theories Development bio-ionic liquids or greener, environment-friendly solvents, and manifold interesting and promising applications of ionic liquid based micelles and micremulsions

This book contains a judicious mix of concepts and solved examples that make it ideal for the beginners taking the Discrete Mathematics course. Features Exhaustive coverage of Set Theory. Comprehensive coverage of Graph Theory and Combinatorics. Excellent discussion of Group theory applications-Coding. Detailed explanation of the solution procedure of the worked examples. Pedagogy includes 341 solved examples 566 short answer questions 556 descriptive questions Over 500 figures and tables

Written in an accessible style, this text provides a complete coverage of discrete mathematics and its applications at an appropriate level of rigour. The book discusses algebraic structures, mathematical logic, lattices, Boolean algebra, graph theory, automata theory, grammars and recurrence relations. It covers the important topics such as coding theory, Dijkstra's shortest path algorithm, reverse polish notation, Warshall's algorithm, Menger's theorem, Turing machine, and LR(k) parsers, which form a part

of the fundamental applications of discrete mathematics in computer science. In addition, Pigeonhole principle, ring homomorphism, field and integral domain, trees, network flows, languages, and recurrence relations. The text is supported with a large number of examples, worked-out problems and diagrams that help students understand the theoretical explanations. The book is intended as a text for postgraduate students of mathematics, computer science, and computer applications. In addition, it will be extremely useful for the undergraduate students of computer science and engineering.

Extremely well organized and lucidly written book with an approach to explain the concepts in communicable languages. Suitable text book for the students of BCA, B.Tech., M.C.A., M.Sc., M Tech., etc. Each Chapter follows Objective type problems. Around 500 objective type problems (235) Multiple choice questions, 130 Fill in the blanks type, 135 True/False type with their answers to help Students understand very concept. Around 800 problems of various level of difficulty in exercises to review the understanding and testing the skills of the students after every section. Around 140 theorems to give better understanding and insights of the concepts Topics are followed by figures and tables. In total more than 400 figures and 140 tables are taken to back the understanding of topics. Chapter includes: Combinatorics, Set Theory, Relations Functions, Group Theory, Rings and Fields, Logic, Lattices, Boolean Algebra, Graph Theory, Automata.

Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately for you, there's Schaum's Outlines. 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: Practice problems with full explanations that reinforce knowledge Coverage of the most up-to-date developments in your course field In-depth review of practices and applications 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! Schaum's Outlines-Problem Solved.

This book constitutes the refereed proceedings of the Third International Conference on Pattern Recognition and Machine Intelligence, PReMI 2009, held in New Delhi, India in December 2009. The 98 revised papers presented were carefully reviewed and selected from 221 initial submissions. The papers are organized in topical sections on pattern recognition and machine learning, soft computing andapplications, bio and chemo informatics, text and data mining, image analysis, document image processing, watermarking and steganography, biometrics, image and video retrieval, speech and audio processing, as well as on applications.

Several areas of mathematics find application throughout computer science, and all students of computer science need a practical working understanding of them. These core subjects are centred on logic, sets, recursion, induction, relations and functions. The material is often called discrete mathematics, to distinguish it from the traditional topics of continuous mathematics such as integration and differential equations. The central theme of this book is the connection between computing and discrete mathematics. This connection is useful in both directions: • Mathematics is used in many branches of computer science, in applica tions including program specification, datastructures,design and analysis of algorithms, database systems, hardware design, reasoning about the correctness of implementations, and much more; • Computers can help to make the mathematics easier to learn and use, by making mathematical terms executable, making abstract concepts more concrete, and through the use of software tools such as proof checkers. These connections are emphasised throughout the book. Software tools (see Appendix A) enable the computer to serve as a calculator, but instead of just doing arithmetic and trigonometric functions, it will be used to calculate with sets, relations, functions, predicates and inferences. There are also special software tools, for example a proof checker for logical proofs using natural deduction.

The book covers the syllabus completely and exhaustively. The five units of the syllabus are presented in the five chapters that make up this book .Each topic of the subject discussed presents the important principles, methods and processes of obtaining results in a systematic way with emphasis on clarity and academic rigour. A lot of standard problems and frequently asked university questions have been worked out in detail for the students' benefit. Exercise problems are given with hints, wherever necessary. Further, a supplement of Frequently Asked Questions and Answers is provided along with the book.

This book comprises select proceedings of the National Conference on Control, Signal Processing, Energy and Power Systems (CSPES 2018). The book covers topics on both theoretical control systems and their applications across engineering domains such as automatic control, robotics, and adaptive controller design. It discusses several signal processing domains such as image, speech, biomedical signal processing and their applications in IOT, control, robotics, power and energy systems. The book emphasizes both conventional and non-conventional energy, environment, and green processes as related to energy and power systems engineering. The contents of this book will prove to be useful for students, researchers, academics, and professionals.

This textbook provides an introduction to some fundamental concepts in Discrete Mathematics and the important role this subject plays in computer science. Every topic in this book has been started with necessary introduction and developed gradually up to the standard form. The book lays emphasis on the applicability of Mathematical structures to computer science. The content of this book is well supported with numerous solved examples with detailed explanation

Discrete Structure, Logic, and Computability introduces the beginning computer science student to some of the fundamental ideas and techniques used by computer scientists today, focusing on discrete structures, logic, and computability. The emphasis is on the computational aspects, so that the reader can see how the concepts are actually used. Because of logic's fundamental importance to computer science, the topic is examined extensively in three phases that cover informal logic, the technique of inductive proof; and formal logic and its applications to computer science.

The two volume set CCIS 1030 and 1031 constitutes the refereed proceedings of the Second International Conference on Computational Intelligence, Communications, and Business Analytics, CICBA 2018, held in Kalyani, India, in July 2018. The 76 revised full papers presented in the two volumes were carefully reviewed and selected from 240 submissions. The papers are organized in topical sections on computational intelligence; signal processing and communications; microelectronics, sensors, and intelligent networks; data science & advanced data analytics; intelligent data mining & data warehousing; and computational forensics (privacy and security).

Discrete Mathematics is designed to serve as a textbook for undergraduate engineering students of computer science and postgraduate students of computer applications. The book would also prove useful to post graduate students of mathematics. It seeks to provide a thorough understanding of the subject and present its practical applications tol computer science.

Common to CSE and IT for all Anna Universities

A more intuitive approach to the mathematical foundation of computer science Discrete mathematics is the basis of much of computer science, from algorithms and automata theory to combinatorics and graph theory. This textbook covers the discrete mathematics that every computer science student needs to learn. Guiding students quickly through thirty-one short chapters that discuss one major topic each, this flexible book can be tailored to fit the syllabi for a variety of courses. Proven in the classroom, Essential Discrete Mathematics for Computer Science aims to teach mathematical reasoning as well as concepts and skills by stressing the art of proof. It is fully illustrated in color, and each chapter includes a concise summary as well as a set of exercises. The text requires only precalculus, and where calculus is needed, a quick summary of the basic facts is provided. Essential Discrete Mathematics for Computer Science is the ideal introductory textbook for

standard undergraduate courses, and is also suitable for high school courses, distance education for adult learners, and self-study. The essential introduction to discrete mathematics Features thirty-one short chapters, each suitable for a single class lesson Includes more than 300 exercises Almost every formula and theorem proved in full Breadth of content makes the book adaptable to a variety of courses Each chapter includes a concise summary Solutions manual available to instructors

This concise, undergraduate-level text focuses on combinatorics, graph theory with applications to some standard network optimization problems, and algorithms. More than 200 exercises, many with complete solutions. 1991 edition.

A Course of Mathematical Analysis

Discrete Mathematics, 5E is designed to provide students with extended logical and mathematical maturity and the ability to deal with abstraction. The text introduces the basic terminologies used in computer science courses and application of ideas to solve practical problems. The concepts of combinatorics and graph theory, applications of algebraic structures and the significance of lattices and Boolean Algebra have been dealt in detail. The text is also bundled with a supplement that includes frequently asked questions and answers.

The goal of this book is to showcase the beauty of mathematics as revealed in nine topics of discrete mathematics. In each chapter, properties are explored through a series of straightforward questions that terminate with results that lie at the doorstep of a field of study. Each step along the way is elementary and requires only algebraic manipulation. This frames the wonder of mathematics and highlights the complex world that lies behind a series of simple, mathematical, deductions. Topics addressed include combinatorics, unifying properties of symmetric functions, the Golden ratio as it leads to k-bonacci numbers, non-intuitive and surprising results found in a simple coin tossing game, the playful, trick question aspect of modular systems, exploration of basic properties of prime numbers and derivations of bewildering results that arise from approximating irrational numbers as continued fraction expansions. The Appendix contains the basic tools of mathematics that are used in the text along with a numerous list of identities that are derived in the body of the book. The mathematics in the book is derived from first principles. On only one occasion does it rely on a result not derived within the text. Since the book does not require calculus or advanced techniques, it should be accessible to advanced high school students and undergraduates in math or computer science. Senior mathematicians might be unfamiliar with some of the topics addressed in its pages or find interest in the book's unified approach to discrete math.

This textbook provides an engaging and motivational introduction to traditional topics in discrete mathematics, in a manner specifically designed to appeal to computer science students. The text empowers students to think critically, to be effective problem solvers, to integrate theory and practice, and to recognize the importance of abstraction. Clearly structured and interactive in nature, the book presents detailed walkthroughs of several algorithms, stimulating a conversation with the reader through informal commentary and provocative questions. Features: no university-level background in mathematics required; ideally structured for classroom-use and self-study, with modular chapters following ACM curriculum recommendations; describes mathematical processes in an algorithmic manner; contains examples and exercises throughout the text, and highlights the most important concepts in each section; selects examples that demonstrate a practical use for the concept in question.

This book expands the sociological canon by introducing non-Western and female voices, and subjects the existing canon itself to critique. Including chapters on both the 'founding fathers' of sociology and neglected thinkers it highlights the biases of Eurocentrism and androcentrism, while also offering much-needed correctives to them. The authors challenge a dominant account of the development of sociological theory which would have us believe that it was only Western European and later North American white males in the nineteenth and early twentieth century who thought in a creative and systematic manner about the origins and nature of the emerging modernity of their time. This integrated and contextualised account seeks to restructure the ways in which we theorise the emergence of the classical sociological canon. This book's global scope fills a significant lacuna and provides a unique teaching resource to students of classical sociological theory.

The present book is meant for the first-year students of various universities. Engineering educationists feel that first-year students of all disciplines must have an elementary and general idea about various branches of electronics. Spread in sixteen chapters, the book broadly discusses.

This text forms a bridge between courses in calculus and real analysis. Suitable for advanced undergraduates and graduate students, it focuses on the construction of mathematical proofs. 1996 edition.