

Chemistry Thermodynamics lit Jee Notes

Advanced Thermodynamics Engineering, Second Edition is designed for readers who need to understand and apply the engineering physics of thermodynamic concepts. It employs a self-teaching format that reinforces presentation of critical concepts, mathematical relationships, and equations with concrete physical examples and explanations of applications—to help readers apply principles to their own real-world problems. Less Mathematical/Theoretical Derivations—More Focus on Practical Application Because both students and professionals must grasp theory almost immediately in this ever-changing electronic era, this book—now completely in decimal outline format—uses a phenomenological approach to problems, making advanced concepts easier to understand. After a decade teaching advanced thermodynamics, the authors infuse their own style and tailor content based on their observations as professional engineers, as well as feedback from their students. Condensing more esoteric material to focus on practical uses for this continuously evolving area of science, this book is filled with revised problems and extensive tables on thermodynamic properties and other useful information. The authors include an abundance of examples, figures, and illustrations to clarify presented ideas, and additional material and software tools are available for download. The result is a powerful, practical instructional tool that gives readers a strong conceptual foundation on which to build a solid, functional understanding of thermodynamics engineering.

Atkins' Physical Chemistry: Molecular Thermodynamics and Kinetics is designed for use on the second semester of a quantum-first physical chemistry course. Based on the hugely popular Atkins' Physical Chemistry, this volume approaches molecular thermodynamics with the assumption that students will have studied quantum mechanics in their first semester. The exceptional quality of previous editions has been built upon to make this new edition of Atkins' Physical Chemistry even more closely suited to the needs of both lecturers and students. Re-organised into discrete 'topics', the text is more flexible to teach from and more readable for students. Now in its eleventh edition, the text has been enhanced with additional learning features and maths support to demonstrate the absolute centrality of mathematics to physical chemistry. Increasing the digestibility of the text in this new approach, the reader is brought to a question, then the math is used to show how it can be answered and progress made. The expanded and redistributed maths support also includes new 'Chemist's toolkits' which provide students with succinct reminders of mathematical concepts and techniques right where they need them. Checklists of key concepts at the end of each topic add to the extensive learning support provided throughout the book, to reinforce the main take-home messages in each section. The coupling of the broad coverage of the subject with a structure and use of pedagogy that is even more innovative will ensure Atkins' Physical Chemistry remains the textbook of choice for studying physical chemistry.

Key Features: A large number of preparatory problems with solutions to sharpen problem-solving aptitude in physics. Ideal for developing an intuitive approach to physics. Inclusion of a number of problems from the suggestions of the jury of recent Moscow Olympiads.

About the Book: The book helps the students in sharpening the problem-solving aptitude in physics. It also guides the students on the ways of approaching a problem and getting its solution. The book also raises the level of learning of physics by practicing problem-solving. It will be especially useful to those who have studied general physics and want to improve their knowledge or try their strength at non-standard problems or to develop an intuitive approach to physics. A feature of the book is that the most difficult problems are marked by asterisks. This book will prove beneficial for the students of the senior secondary, undergraduate courses. It will also help those students who are preparing for engineering, medical entrance examinations and for physics Olympiads.

The new Xam Idea for Class XII Physics 2020-21 has been thoroughly revised, diligently designed, and uniquely formatted in accordance with CBSE requirements and NCERT guidelines. The features of the new Xam Idea are as follows:

1. The book has been thoroughly revised as per the new CBSE Examination Paper design.
2. The book is divided into two Sections: Part–A and Part–B.
3. Part–A includes the following:
 - Each Chapter is summarised in ‘Basic Concepts’.
 - Important NCERT Textbook and NCERT Exemplar questions have been incorporated.
 - Previous Years’ Questions have been added under different sections according to their marks.
 - Objective Type Questions have been included as per new CBSE guidelines. These include Multiple Choice Questions, Very Short Answer Questions, and Fill in the Blanks carrying 1 mark each.
 - Short Answer Questions carrying 2 marks each and Long Answer Questions carrying 3 marks and 5 marks have also been added.
 - At the end of every chapter, Self-Assessment Test has been given to test the extent of grasp by the student.
4. Part–B includes the following:
 - CBSE Sample Question Paper 2020 with complete solution.
 - Blueprint as per latest CBSE Sample Question Paper and Examination Paper 2020.
 - Unsolved Model Question Papers for ample practice by the student.
 - Solved CBSE Examination Papers 2020 (55/1/1), (55/1/2) and (55/1/3).
 - Solved sets of remaining four regions’ CBSE Examination Papers are given in QR code.

Volume 5.

This modern overview to performance analysis places aero- and fluid-dynamic treatments, such as cascade and meridional flow analyses, within the broader context of turbomachine performance analysis. For the first time ducted propellers are treated formally within the general family of turbomachines. It also presents a new approach to the use of dimensional analysis which links the overall requirements, such as flow and head, through velocity triangles to blade element loading and related fluid dynamics within a unifying framework linking all aspects of performance analysis for a wide range of turbomachine types. Computer methods are introduced in the main text and a key

chapter on axial turbine performance analysis is complemented by the inclusion of 3 major computer programs on an accompanying disc. These enable the user to generate and modify design data through a graphic interface to assess visually the impact on predicted performance and are designed as a Computer Aided Learning Suite for student project work at the professional designer level. Based on the author's many years of teaching at degree level and extensive research experience, this book is a must for all students and professional engineers involved with turbomachinery.

Silent Features: ? How To Prepare for IITJEE EXAM IIT JEE coaching in Kota JEE SELF STUDY REQUIRED JEE MAINS PREPARATION How to attempt JEE Main online examination . What To Do, Just a Day Before the JEE Main Don't Compare Marks of Students to Others Always trying never give up !!! Preparation of JEE Mains and Board Exams simultaneously Detailed Analysis of JEE MAINS Topics (PHYSICS & MATHS). Detailed Analysis of JEE MAINS Topics (Chemistry). ANNOUNCEMENT ABOUT THIS SERIES.

GKP's Physics Galaxy Lecture Notes Series is an ideal preparation set for the Physics division of the exams such as IIT JE (Mains and Advance), BITSAT and NEET. This series covers 4 volumes covering 4 major sections of Physics namely- Volume-I Mechanics, Volume-II Thermodynamics, oscillations and waves, Volume-III Electricity and Magnetism and Volume IV Optics and Modern Physics. All notes in all four volumes are supported with video lectures to help the students prepare better.

Features: *Comprehensive notes with video lectures *Covers the major divisions of Physics * Designed as per the exam pattern

An advanced-level textbook of physical chemistry for the graduate (B.Sc) and postgraduate (M.Sc) students of Indian and foreign universities. This book is a part of four volume series, entitled "A Textbook of Physical Chemistry – Volume I, II, III, IV".

CONTENTS: Chapter 1. Quantum Mechanics – I: Postulates of quantum mechanics; Derivation of Schrodinger wave equation; Max-Born interpretation of wave functions; The Heisenberg's uncertainty principle; Quantum mechanical operators and their commutation relations; Hermitian operators (elementary ideas, quantum mechanical operator for linear momentum, angular momentum and energy as Hermitian operator); The average value of the square of Hermitian operators; Commuting operators and uncertainty principle(x & p; E & t); Schrodinger wave equation for a particle in one dimensional box; Evaluation of average position, average momentum and determination of uncertainty in position and momentum and hence Heisenberg's uncertainty principle; Pictorial representation of the wave equation of a particle in one dimensional box and its influence on the kinetic energy of the particle in each successive quantum level; Lowest energy of the particle. Chapter 2. Thermodynamics – I: Brief resume of first and second Law of thermodynamics; Entropy changes in reversible and irreversible processes; Variation of entropy with temperature, pressure and volume; Entropy concept as a measure of unavailable energy and criteria for the spontaneity of reaction; Free energy, enthalpy functions and their significance, criteria for spontaneity of a process; Partial molar quantities (free energy, volume, heat concept); Gibb's-Duhem equation. Chapter 3. Chemical Dynamics – I: Effect of temperature on reaction rates; Rate law for opposing reactions of 1st order and 2nd order; Rate law for consecutive & parallel reactions of 1st order reactions; Collision theory of reaction rates and its limitations; Steric factor; Activated complex theory; Ionic

reactions: single and double sphere models; Influence of solvent and ionic strength; The comparison of collision and activated complex theory. Chapter 4. Electrochemistry – I: Ion-Ion Interactions: The Debye-Huckel theory of ion-ion interactions; Potential and excess charge density as a function of distance from the central ion; Debye Huckel reciprocal length; Ionic cloud and its contribution to the total potential; Debye - Huckel limiting law of activity coefficients and its limitations; Ion-size effect on potential; Ion-size parameter and the theoretical mean-activity coefficient in the case of ionic clouds with finite-sized ions; Debye - Huckel-Onsager treatment for aqueous solutions and its limitations; Debye-Huckel-Onsager theory for non-aqueous solutions; The solvent effect on the mobility at infinite dilution; Equivalent conductivity (Λ) vs. concentration $c^{1/2}$ as a function of the solvent; Effect of ion association upon conductivity (Debye- Huckel - Bjerrum equation). Chapter 5. Quantum Mechanics – II: Schrodinger wave equation for a particle in a three dimensional box; The concept of degeneracy among energy levels for a particle in three dimensional box; Schrodinger wave equation for a linear harmonic oscillator & its solution by polynomial method; Zero point energy of a particle possessing harmonic motion and its consequence; Schrodinger wave equation for three dimensional Rigid rotator; Energy of rigid rotator; Space quantization; Schrodinger wave equation for hydrogen atom, separation of variable in polar spherical coordinates and its solution; Principle, azimuthal and magnetic quantum numbers and the magnitude of their values; Probability distribution function; Radial distribution function; Shape of atomic orbitals (s,p & d). Chapter 6. Thermodynamics – II: Classius-Clayperon equation; Law of mass action and its thermodynamic derivation; Third law of thermodynamics (Nernst heat theorem, determination of absolute entropy, unattainability of absolute zero) and its limitation; Phase diagram for two completely miscible components systems; Eutectic systems, Calculation of eutectic point; Systems forming solid compounds $A_x B_y$ with congruent and incongruent melting points; Phase diagram and thermodynamic treatment of solid solutions. Chapter 7. Chemical Dynamics – II: Chain reactions: hydrogen-bromine reaction, pyrolysis of acetaldehyde, decomposition of ethane; Photochemical reactions (hydrogen - bromine & hydrogen -chlorine reactions); General treatment of chain reactions (ortho-para hydrogen conversion and hydrogen - bromine reactions); Apparent activation energy of chain reactions, Chain length; Rice-Herzfeld mechanism of organic molecules decomposition(acetaldehyde); Branching chain reactions and explosions (H_2-O_2 reaction); Kinetics of (one intermediate) enzymatic reaction : Michaelis-Menton treatment; Evaluation of Michaelis 's constant for enzyme-substrate binding by Lineweaver-Burk plot and Eadie-Hofstae methods; Competitive and non-competitive inhibition. Chapter 8. Electrochemistry – II: Ion Transport in Solutions: Ionic movement under the influence of an electric field; Mobility of ions; Ionic drift velocity and its relation with current density; Einstein relation between the absolute mobility and diffusion coefficient; The Stokes- Einstein relation; The Nernst -Einstein equation; Walden's rule; The Rate-process approach to ionic migration; The Rate process equation for equivalent conductivity; Total driving force for ionic transport, Nernst - Planck Flux equation; Ionic drift and diffusion potential; the Onsager phenomenological equations; The basic equation for the diffusion; Planck-Henderson equation for the diffusion potential.

This book – specifically developed as a novel textbook on elementary classical

mechanics – shows how analytical and numerical methods can be seamlessly integrated to solve physics problems. This approach allows students to solve more advanced and applied problems at an earlier stage and equips them to deal with real-world examples well beyond the typical special cases treated in standard textbooks. Another advantage of this approach is that students are brought closer to the way physics is actually discovered and applied, as they are introduced right from the start to a more exploratory way of understanding phenomena and of developing their physical concepts. While not a requirement, it is advantageous for the reader to have some prior knowledge of scientific programming with a scripting-type language. This edition of the book uses Matlab, and a chapter devoted to the basics of scientific programming with Matlab is included. A parallel edition using Python instead of Matlab is also available. Last but not least, each chapter is accompanied by an extensive set of course-tested exercises and solutions.

The construction of buildings and structures relies on having a thorough understanding of building materials. Without this knowledge it would not be possible to build safe, efficient and long-lasting buildings, structures and dwellings. Building materials in civil engineering provides an overview of the complete range of building materials available to civil engineers and all those involved in the building and construction industries. The book begins with an introductory chapter describing the basic properties of building materials. Further chapters cover the basic properties of building materials, air hardening cement materials, cement, concrete, building mortar, wall and roof materials, construction steel, wood, waterproof materials, building plastics, heat-insulating materials and sound-absorbing materials and finishing materials. Each chapter includes a series of questions, allowing readers to test the knowledge they have gained. A detailed appendix gives information on the testing of building materials. With its distinguished editor and eminent editorial committee, Building materials in civil engineering is a standard introductory reference book on the complete range of building materials. It is aimed at students of civil engineering, construction engineering and allied courses including water supply and drainage engineering. It also serves as a source of essential background information for engineers and professionals in the civil engineering and construction sector. Provides an overview of the complete range of building materials available to civil engineers and all those involved in the building and construction industries Explores the basic properties of building materials featuring air hardening cement materials, wall and roof materials and sound-absorbing materials Each chapter includes a series of questions, allowing readers to test the knowledge they have gained This best-selling guide from Barron's offers practical, proven test-taking strategies and preparation for the Advanced Placement test. This updated manual presents computer science test takers with: Three AP practice tests for the AP Computer Science A test, including a diagnostic test Charts detailing the scoring suggestions for each free-response question Answers and explanations for every test question A subject review includes static variables, the List interface, enhanced for loops, the import statement, many questions on

2-dimensional arrays, and a detailed analysis of the binary search algorithm. The book reflects the fact that the `ClassCastException` and downcasting have been removed from the AP Java subset. The practice exams reflect the new free-response style used on recent AP exams. **ONLINE PRACTICE TESTS:** Students who purchase this book will also get access to three additional full-length online AP Computer Science A tests with all questions answered and explained. These online exams can be easily accessed by smartphone, tablet, or computer.

It is a known fact that there is no substitute for hard work - However hard work must be done smartly to get the desired result. Keeping Smart Hard Work philosophy in mind, we have designed this book. As time plays an important factor & is limited in competitive exams hence the magic to score high in such examination is to solve questions accurately with speed. The ability to solve lengthy questions accurately in the shortest possible time will fetch you lead over other students resulting not only into good marks but also top rank. And the Short Tricks is sure to make it happen. For this purpose, we are elated to present a compilation of Short Tricks of Mathematics in a book form. These tricks have the edge which can make any aspirant solve questions accurately & quickly.

Completely revised, this new edition includes the latest material on oil analysis, the energy conservation aspects of lube oil application and selection and bearing protector seals. Information on synthesized hydrocarbons and oil mist lubrication is thoroughly revised. It addresses the full scope of industrial lubricants, including general purpose oils, hydraulic fluids, food-grade and environmentally friendly lubricants, synthetic lubricants, greases, pastes, waxes and tribosystems.

Detailed coverage is provided on lubrication strategies for electric motor bearings, gear lubrication, compressors and gas engines, and steam and gas turbines. Other topics include proper lubricant handling and storage, as well as effective industrial plant oil analysis practices.

This book is meant to be a quick refresher for JEE (MAIN)/AIEEE aspirants. With the aim and scope of providing a comprehensive study package for aspirants of JEE (MAIN)/AIEEE, this crash course focuses less on theory and more on concepts, formulae and tips. This is supported by plenty of practice problems based on the latest formats, structure and syllabus of JEE (MAIN)/AIEEE. This is further supplemented by a CD given along with this study kit with fully solved 2012 JEE (MAIN)/AIEEE question paper. **Salient features:** A Based on the latest pattern and syllabus of JEE (MAIN)/AIEEE A Solved examples, practice problems in each chapter A Previous years question papers fully solved A Less theory and more concepts, formulae and tips A Practice CD with fully solved JEE (MAIN)/AIEEE 2012 question paper A Plenty of problems for practice A Comprehensive, holistic revision of the complete syllabus of JEE (MAIN)/AIEEE A In-depth analysis of the recent trends of JEE (MAIN)/AIEEE A A quick and efficient study kit for JEE (MAIN)/AIEEE aspirants A Facilitates self-study. A Low priced, handy book for quick and efficient revision

Every year lakhs of students appear for the JEE Main Exam to pursue their dream of

becoming a “Engineer”. In order to qualify this exams students need have clear concepts, strong basic foundation of the subjects and thorough practice. “JEE MAIN IN 40 DAYS PHYSICS” is the most accepted crash course programme for the students who are preparing Join Entrance Test (JEE Main-2020). Being the best seller among the students, this book is carefully and consciously designed for the last minute preparation of the JEE Main Exam. This book gives the complete coverage of the syllabus that is divided into 40 Days Modules which includes Quick Theory covering all the important points, formulae and the concepts. It provides Objective Question which covers every type of exam questions including 6 Unit Tests and 3 Full Length Mock Tests which gives the real feel of the exam. Moreover Free Online Practice Material can be availed by the students to practice online. This book accelerates the level of preparation done by the students and ensures scoring high marks in a time. TABLE OF CONTENTS Preparing JEE Main 2020 Chemistry in 40 Days!, Day 1: Some Basic Concepts of Chemistry, Day 2: States of Matter, Day 3: Atomic Structure, Day 4: Chemical Bonding and Molecular Structure, Day 5: Unit Test 1 (General Chemistry), Day 6: Chemical Thermodynamics, Day 7: Thermochemistry, Day 8: Solutions, Day 9: Physical and Chemical Equilibrium, Day 10: Ionic Equilibrium, Day 11: Unit Test 2 (Physical Chemistry-I), Day 12: Redox Reactions, Day 13: Electrochemistry, Day 14: Chemical Kinetics, Day 15: Adsorption and Catalysis, Day 16: Colloidal State, Day 17: Unit Test 3 (Physical Chemistry-II), Day 18: Classification and Periodicity of Elements, Day 19: General Principles and Processes of Isolation of Metals, Day 20: Hydrogen Day 21: s-Block Elements, Day 22: p-Block Elements (Group 13 to Group 18), Day 23: The d-and f-Block Elements, Day 24: Coordination Compounds, Day 25 Unit Test 4 (Inorganic Chemistry), Day 26: Environmental Chemistry, Day 27: General Organic Chemistry Day 28: Hydrocarbons, Day 29: Organic Compounds Containing Halogens, Day 30: Organic Compounds Containing Oxygen, Day 31: Organic Compounds Containing Nitrogen, Day 32: Unit Test 5 (Organic Chemistry-I), Day 33: Polymers, Day 34: Biomolecules, Day 35: Chemistry in Everyday Life, Day 36: Analytical Chemistry, Day 37: Unit Test 6 (Organic Chemistry-II), Day 38: Mock Test 1, Day 39: Mock Test 2, Day 40: Mock Test 3, Online JEE Main Solved Papers 2019

In the past few years, the IIT-JEE has evolved as an examination designed to check a candidate's true scientific skills. The examination pattern needs one to see those little details which others fail to see. These details tell us how much in-depth we should know to explain a concept in the right direction. Keeping the present-day scenario in mind, JEE Advanced Physics series is written for students, to allow them not only to learn the tools but also to see why they work so nicely in explaining the beauty of ideas behind the subject. The central goal of this series is to help the students develop a thorough understanding of Physics as a subject. This series stresses on building a rock-solid technical knowledge based on firm foundation of the fundamental principles followed by a large collection of formulae. The primary philosophy of this series is to guide the aspirants towards detailed groundwork for strong conceptual understanding and development of problem-solving skills like mature and experienced physicists. This updated Third Edition of the series will help the aspirants prepare for both Advanced and Main levels of JEE conducted for IITs and other elite engineering institutions in India. This book will also be equally useful for the students preparing for Physics Olympiads. All books in this series are enriched with detailed exhaustive theory that

introduces the concepts of Physics in a clear, concise, thorough and easy-to-understand language. A large collection of relevant problems is provided in eight major categories (including updated archive for JEE Advanced and JEE Main), for which the solutions are demonstrated in a logical and stepwise manner.

Designed as an undergraduate-level textbook in Chemical Engineering, this student-friendly, thoroughly class-room tested book, now in its second edition, continues to provide an in-depth analysis of chemical engineering thermodynamics. The book has been so organized that it gives comprehensive coverage of basic concepts and applications of the laws of thermodynamics in the initial chapters, while the later chapters focus at length on important areas of study falling under the realm of chemical thermodynamics. The reader is thus introduced to a thorough analysis of the fundamental laws of thermodynamics as well as their applications to practical situations. This is followed by a detailed discussion on relationships among thermodynamic properties and an exhaustive treatment on the thermodynamic properties of solutions. The role of phase equilibrium thermodynamics in design, analysis, and operation of chemical separation methods is also deftly dealt with. Finally, the chemical reaction equilibria are skillfully explained. Besides numerous illustrations, the book contains over 200 worked examples, over 400 exercise problems (all with answers) and several objective-type questions, which enable students to gain an in-depth understanding of the concepts and theory discussed. The book will also be a useful text for students pursuing courses in chemical engineering-related branches such as polymer engineering, petroleum engineering, and safety and environmental engineering. New to This Edition • More Example Problems and Exercise Questions in each chapter • Updated section on Vapour–Liquid Equilibrium in Chapter 8 to highlight the significance of equations of state approach • GATE Questions up to 2012 with answers

Containing the very latest information on all aspects of enthalpy and internal energy as related to fluids, this book brings all the information into one authoritative survey in this well-defined field of chemical thermodynamics. Written by acknowledged experts in their respective fields, each of the 26 chapters covers theory, experimental methods and techniques and results for all types of liquids and vapours. These properties are important in all branches of pure and applied thermodynamics and this vital source is an important contribution to the subject hopefully also providing key pointers for cross-fertilization between sub-areas.

This book will strengthen a student's grasp of the laws of physics by applying them to practical situations, and problems that yield more easily to intuitive insight than brute-force methods and complex mathematics. These intriguing problems, chosen almost exclusively from classical (non-quantum) physics, are posed in accessible non-technical language requiring the student to select the right framework in which to analyse the situation and decide which branches of physics are involved. The level of sophistication needed to tackle most of the two hundred problems is that of the exceptional school student, the good undergraduate, or competent graduate student. The book will be valuable to undergraduates preparing for 'general physics' papers. It is hoped that even some physics professors will find the more difficult questions challenging. By contrast, mathematical demands are minimal, and do not go beyond elementary calculus. This intriguing book of physics problems should prove instructive,

challenging and fun.

Oxidizing and Reducing Agents S. D. Burke University of Wisconsin at Madison, USA
R. L. Danheiser Massachusetts Institute of Technology, Cambridge, USA
Recognising the critical need for bringing a handy reference work that deals with the most popular reagents in synthesis to the laboratory of practising organic chemists, the Editors of the acclaimed Encyclopedia of Reagents for Organic Synthesis (EROS) have selected the most important and useful reagents employed in contemporary organic synthesis. Handbook of Reagents for Organic Synthesis: Oxidizing and Reducing Agents, provides the synthetic chemist with a convenient compendium of information concentrating on the most important and frequently employed reagents for the oxidation and reduction of organic compounds, extracted and updated from EROS. The inclusion of a bibliography of reviews and monographs, a compilation of Organic Syntheses procedures with tested experimental details and references to oxidizing and reducing agents will ensure that this handbook is both comprehensive and convenient.

Thermochemistry and Thermodynamics A Complete IITJEE

Preparation EDUBLOGS4u DEEPAK SHARMA

This book compiles state-of-the-art information on the behavior, analysis, and design of concrete beams containing transverse openings. Discussions include the need, effects, and classification of openings as well as the general requirements for fulfilling design pure bending, combined bending, and shear - illustrated with numerical examples torsion alone or in combination with bending and shear large rectangular openings as well as opening size and location on beam behavior methods for analyzing ultimate strength and serviceability requirements effects of torsion in beams large openings in continuous beams and their effects on possible redistribution of internal forces as well as guidelines and procedures for the design of such beams effect of prestressing on the serviceability and strength of beams with web openings design against cracking at openings and ultimate loads Concrete Beams with Openings serves as an invaluable source of information for designers and practicing engineers, especially useful since little or no provision or guidelines are currently available in most building codes.

The nature of concrete is rapidly changing, and with it, there are rising concerns.

Thoroughly revised and updated, this fourth edition of Concrete Mix Design, Quality Control and Specification addresses current industry practices that provide inadequate durability and fail to eliminate problems with underperforming new concrete and defective testing. Many specifications now require additional criteria in an attempt to improve durability or other properties. This book discusses the trend towards adding performance requirements to existing prescriptive specifications. It also explores the matter of prescription versus performance specification and especially the specification of non-strength-related performance such as durability. What's new in the Fourth Edition: Examines water-to-cement ratio as a declining criterion of quality and durability Discusses the diminishing availability of suitable natural sands and growing industry concerns regarding the environmental impact of their use Considers advances in concrete admixtures and their ever-increasing use Advocates reliability of testing as a vital feature of the shift from prescriptive to performance specifications Addresses cement replacement materials as they relate to greenhouse gas and sustainability Concrete Mix Design, Quality Control and Specification explores producing, designing, controlling, or specifying concrete, and addresses issues related with sustainability and

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the impact of new concrete materials such as ready mixed geopolymers, magnesium oxide, and calcium carbonate. The text is an ideal resource for concrete technologists, producers and specifiers, and contractors on large projects

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