This new edition retains its design-led focus and strong emphasis on visual communication while expanding its inclusion of the underlying science of materials to fully meet the needs of instructors teaching an introductory course in materials. A design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications. Highly visual full color graphics facilitate understanding of materials concepts and properties. For instructors, a solutions manual, lecture slides, online image bank, and materials selection charts for use in class handouts or lecture presentations are available at http://textbooks.elsevier.com. The number of worked examples has been increased by 50% while the number of standard end-of-chapter exercises in the text has been doubled. Coverage of materials and the environment has been updated with a new section on Sustainability and Sustainable Technology. The text meets the curriculum needs of a wide variety of courses in the materials and design field, including introduction to materials science and engineering, engineering materials, materials selection and processing, and materials in design. Design-led approach motivates and engages students in the study of materials science and engineering through real-life case studies and illustrative applications. Highly visual full color graphics facilitate understanding of materials concepts and properties. Chapters on materials selection and design are integrated with chapters on materials fundamentals, enabling students to see how specific fundamentals can be important to the design process. For instructors, a solutions manual, lecture slides, online image bank and materials selection charts for use in class handouts or lecture presentations are available at http://textbooks.elsevier.com. Links with the Cambridge Engineering Selector (CES EduPack), the powerful materials selection software. See www.grantadesign.com for information NEW TO THIS EDITION: Text and figures have been revised and updated throughout. The number of worked examples has been increased by 50%. The number of standard end-of-chapter exercises in the text has been doubled. Coverage of materials and the environment has been updated with a new section on Sustainability and Sustainable Technology. Disha’s Quantitative Aptitude for CAT is a book focussed on mastering techniques to crack these examinations. The book starts from a basic level and moves to an expert level. The book has been updated with the solutions of past 5 years in a separate section. • Structure of the book: The book comprises of 6 Units divided into 22 chapters followed by 3 Mock Tests. Each chapter consists of Theory with Illustrations. Foundation Level Exercise Standard Level Exercise Expert Level Exercise Solutions to the 3 levels of exercises Test Yourself Solutions to Test Yourself • The complete book has been divided into 5 units (Numbers, Arithmetic, Algebra, Geometry and Counting Principles) which have been further divided into 22 chapters. • Each chapter includes detailed review of all the concepts involved with exhaustive number of well discussed Illustrations. • The theory is followed by 3 levels of exercises – Foundation Level, Standard Level and Expert Level. The detailed solution to each and every question has been provided immediately at the end of the 3 exercises. • The book contains 22 Chapterwise Tests – ’Test Yourself’ on the basis of latest CAT pattern after the exercises in each chapter. • At the end of the book 3 Mock Tests are provided based on the exact pattern of latest CAT exams. The solutions to the test are provided at the end of the tests. • The book contains questions of past 5 years of CAT Exam. Lists citations with abstracts for aerospace related reports obtained from world wide sources and announces documents that have recently been entered into the NASA Scientific and Technical Information Database. This book offers an overview of the state of the art in the field of DeNOx catalysis in order to focus novel orientations, new technological developments, from laboratory to industrial scale. A particular attention has been paid towards the implementation of catalytic processes for minimising NOx emissions either from stationary or mobile sources under lean condition to meet future standard regulations of NOx emissions. In the first part of this book, critical aspects reported in the literature which usually make difficult the achievement of efficient catalytic technologies in those conditions are summarised and analysed in order two separate new perspectives. The second part deals with fundamental aspects at molecular level. A better understanding of the reactions involved under unsteady-state conditions is probably a pre-requisite step for improving the performances of the actual processes or developing original ones. The development of powerful in situ spectroscopic techniques is of fundamental interest for kinetic modelling. Correlations between spectroscopic and kinetic data with those obtained from theoretical calculations are reported. Some illustrations emphasise the fact that these comparisons may help in determining the nature of the catalytic active sites and building predictive tools for simulations under running conditions. The latter part of this book will be illustrated by different practical approaches covering various aspects related to the catalysts preparation and the development of alternative technologies which include industrial considerations. • New technological developments for investigating catalytic reactions in transient conditions (in situ and operando spectroscopic techniques) - Concerted approaches in DeNOx catalysis - How academic aspects (kinetic, in situ spectroscopic measurements) can provide useful information for practical applications - Comparison of different approaches provided by academic and industrial partners.