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In bringing out this catalogue of our Engineering Publications, we once again gratefully acknowledge your continued and cordial co-operation.

During the past years, you have been very grateful to render us your great support and help which have promoted the development of our business. For this, we would like to take this opportunity of expressing our sincere thanks. In order to attain a wider readership of our publications, we would appreciate your constant assistance in this respect.

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ABOUT THE BOOK

In this text-book, the approach is to study systematically the laws of Mechanics and their application to engineering problems. The outline of the book is:

Chapters 1 and 2 discuss Introduction of Mechanics; Fundamental Concepts and Principles; Scalars, Vectors and Tensors; SI Units, Vector Algebra, etc.

Chapter 3 to 10 consist the study of Mechanics of Rigid Bodies: Fundamentals of Statics, Forces and Force systems such as coplanar concurrent force systems; Moments; Parallel Forces and Couples; Spatial forces; Reactions etc.

Chapter 11 deals in Properties of Lines, Areas and Solids.

Chapter 12 and 13 discuss application of the connected bodies viz., trusses, frames and mechanisms.

Chapter 14 gives problems of statics in Graphics Statics

Chapter 15 and 16 Moments of Inertia of Areas and Masses; Friction respectively.

Chapters 17 to 21 include the study of Dynamics and Kinematics such as — the motion of the particles, etc.

Chapters 22 to 29 deal with topics on Kinetics of Particles such as Laws of Motion; Work and Energy; Impulse and Momentum. Special Topics such as Central Force Motion and Collisions; Kinetics of Systems of Particles, Kinetics of Rigid Bodies; Motion of Vehicles are also covered.

Chapters 30 to 38 deal with topics such as Balancing and Rotating Masses; Virtual Work; The Catenary; Belt and Rope Drive; Toothed Gearing; Lifting Machine; Mechanical Vibration; Hydrostatics and Impact of Jets.

This book is now contains:

* 904 Neatly drawn figures; * 56 Useful tables; * 453 Solved examples; * 670 Unsolved examples at the end of chapters.

It is hoped that this edition should prove extremely useful to students of Engineering reading for Degree Examinations of all the Universities of India, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses, as well as for the U.P.S.C., G.A.T.E., A.M.I.E., I.E.S. and other similar competitive and professional examinations. It should also prove of great interest and practical use to the practising engineers.
It is now more than 48 years since the First Edition of “Elements of Applied Mechanics” by Principal S. B. Junnarkar was published in 1955, which is now running in its 16th Revised, Enlarged and completely updated edition by Dr. H. J. Shah containing 776 pages. During this period, it has been accepted as the most standard and highly acclaimed textbook, which is widely used by a large group of students of Engineering of all branches reading for Engineering Degree Examinations of almost all the Indian Universities, as well as for Diploma Examinations conducted by various Boards of Technical Examinations, and also by the candidates reading for A.M.I.E., U.P.S.C. and GATE examinations, etc.

On numerous requests from the students learning for this subject from various Engineering Institutions requesting us to publish “Worked Examples of Applied Mechanics”, and therefore this book is prepared containing 651 solutions of the examples given at the end of 38 chapters from the textbook “Applied Mechanics” with 480 Neat and self-explanatory drawings. Each chapter begins with summery, which gives an overview the entire topic and therefore the book becomes independent.

The students using this book in reference with the “Applied Mechanics” textbook will be able to cover their syllabus thoroughly and need not to refer now any other Guide book of this subject, and would find this book extremely useful to deepen their knowledge and get success in their examination of this Engineering Subject.
This standard text-book along with its companion Vol. II is designed to cover the complete syllabi of the subjects of Strength of Materials and Theory and Analysis of Structures.

The outline of the book is:

Chapters 1 to 8 consist the study of Stresses and Strains
Chapters 9 and 24 discuss the Testing of Materials
Chapters 10 and 11 Shear Forces and Bending Moments
Chapters 12 and 13 Properties of Lines and Areas
Chapters 14 and 15 Stresses in Beams
Chapters 16 and 17 Deflections
Chapters 18 and 19 Analysis of Fixed and Continuous Beams
Chapters 20 and 21 Composite and Reinforced Concrete Beams
Chapters 22 Direct and Bending Stresses and Chapter 23 Torsion
Chapters 25 Columns and Struts of Uniform Section
Chapters 26 Cylindrical and Spherical Shells
Chapters 27 and 28 Riveted, Bolted and Welded Joints
Chapters 29, 30 and 31 consist of special topics such as Shear Centre, Unsymmetrical Bending and Bending Stresses in Curved Bars.

The book within its 971 + 20 pages, it now comprise the following:

* 900 Neatly drawn figures
* 600 Fully illustrated solved examples
* 715 Unsolved examples with answers at the end of chapters
* 33 Useful tables

It is hoped that this edition should prove extremely useful to students of Engineering reading for Degree Examinations of all the Universities of India, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses, as well as for the U.P.S.C., G.A.T.E., A.M.I.E., I.E.S and other similar competitive and professional examinations. It should also prove of great interest and practical use to the practising engineers.
This text-book published in continuation of its Vol. I. This volume discusses the theory and analysis of structures in comprehensive and lucid manner.

This book is written by an eminent author who had an experience of over thirty years in the teaching of the subject, and now, it is revised and enlarged by the experienced teacher.

The book within its 21 chapters now contains more than:

* 400 Fully solved problems
* 440 Examples with answers
* 640 Neatly drawn diagrams

It is published entirely in SI Units.

It is hoped that this edition will prove extremely useful to the students of Civil, Mechanical and Architecture Engineering reading for Degree Examinations of all the Universities of India, Diploma Examinations conducted by various Boards of Technical Examinations, also Certificate Courses, as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional Examinations. It should also prove of great interest and practical use to the practising engineers.
Many Universities have adopted this subject for general stream for all first year engineering students. Therefore, in this textbook titled Mechanics of Solids, approach is to study systematically the fundamentals of Mechanics of Solids and their application to engineering problems which comprises of Statics from Applied Mechanics and a few topics from Strength of Materials.

The conspectus of the book is:
Chapter 01 and 02 gives Introduction of Mechanics; fundamental concepts and principles; Scalers, Vectors and Tensors; SI units, Vectors etc.
Chapter 03 to 07 Mechanics of Rigid Bodies: Fundamentals of Statics etc.
Chapter 08 gives Types of Loads, Beams, Supports and Support Reactions etc.
Chapter 09 Trusses; Chapter 10 Graphics statics
Chapter 11 and 12 Properties of Lines and Areas, Distributed forces, Centre of Gravity and Moment of Inertia.
Chapter 13 and 14 Friction; Chapter 15 Simple Machines
Chapter 16 to 28 Mechanics of deformable bodies or Strength of Materials
Chapter 16 to 19 consist Simple stresses and strains
Chapter 20, 21 and 22 Principal stresses and strains
Chapter 23 and 28 Physical, Mechanical Properties and Testing of Structural Materials.
Chapter 24 and 25 Shear forces and Bending Moments
Chapter 26 and 27 Stresses in Beams.

The book within its 768 + 20 pages, It comprise the following:
* 975 Neatly drawn sketches
* 40 Useful tables
* 489 Fully illustrated worked examples
* 558 Unsolved examples with answers and
* 26 Questions at the ends of chapters

The salient features of the book are:
* Simple, lucid and easy language; * Step-by-step treatment of the subject; * Comprehensive presentation; * Entirely in SI units.

The text-matter has been arranged systematically to satisfy the need of the First Year Engineering Students (Common to all branches) and also Architecture Students of all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also be an immense use to practising Civil Engineers.
EXPERIMENTS IN MECHANICS OF SOLIDS

B. M. RAVAL

Edition : 1st Edition
ISBN : 9789380358321
Size : 170 mm × 240 mm
Binding : Paperback
Pages : 172 + 12 = 184

ABOUT THE BOOK

This book presents the clear understanding of the principles underlying Laboratory Experiments in Mechanics of Solids or Strength of Materials. Keeping in view the development of observation power, principles of mechanics of materials, standards and specifications, method of reporting the results and method of investigations as well as other basic experiments, the subject matter of the book is framed. Instruction to teachers, model assessment sheet, assignments and model slips for practical examination are given at the end of each chapter. Some of the models developed by the author are also discussed to inspire the readers to work in the same direction. IS: Index given at the end of each chapter is an additional information provided to study the experiment in detail.

With all the above salient features, this unique and invaluable book will be extremely useful to the Engineering students preparing for the Degree Examinations of Civil, Mechanical, Electrical, Electronics and Computer Engineering of all the Indian Universities. The book will be equally useful to the Polytechnic students and also to the candidates reading for the A.M.I.E. Examinations conducted by the Board of Technical Education Examinations. The Engineers connected with the "Laboratory Testing" would also find this book most useful.

CONTENT

1 : IMPORTANCE OF LABORATORY TESTS
2 : LABORATORY MACHINES
3 : TENSION TEST
4 : COMPRESSION TEST
5 : TORSION TEST
6 : TRANSVERSE TEST
7 : IMPACT TEST
8 : HARDNESS TEST
9 : FATIGUE TEST
10 : BEND TEST
11 : SOME EXPERIMENTS USING E.S.A. TECHNIQUE
12 : MECHANICAL EXTENSOMETERS
13 : PRESENTATION OF REPORT
14 : PLANNING A STRENGTH OF MATERIALS LABORATORY
15 : SOME WORKING MODELS IN EXPERIMENTAL MECHANICS OF SOLIDS
16 : OBJECTIVE EXPERIMENTS
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BOOKS ON CIVIL / STRUCTURAL ENGINEERING
ABOUT THE BOOK

This Volume I elucidates the basic principles involved in the analysis and design of Elementary Reinforced Concrete Structures. The book begins with an introduction to concrete technology and continues with chapters on design of beams, slabs, columns, foundations, retaining walls, etc. These chapters are based on the Limit State Method following latest revision of IS : 456-2000. A few computer programmes to design a section for flexure are introduced. It also includes chapters on formwork and detailing of reinforcements.

The salient features of the book are:

* Simple, lucid and easy language
* Step-by-step treatment
* Exposition to practical problems

This book in its 24 chapters now contains:

* 500 Self explanatory and neat diagrams with excellent detailing
* 228 Fully-solved examples
* 257 Unsolved examples with answers and questions at the end of chapters
* 150 Useful tables
* 9 Computer programmes
* 235 Short questions with answers is given in APPENDIX A.

It is hoped that the book should be extremely useful to the Civil Engineering and Architecture students preparing for Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses, as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations.

CONTENT

1 : INTRODUCTION
2 : PROPERTIES OF MATERIALS
3 : STRUCTURAL CONCRETE
4 : DESIGN FOR FLEXURE: FUNDAMENTALS
5 : DESIGN FOR FLEXURE: WORKING STRESS METHOD
6 : LIMIT STATE METHOD
7 : SHEAR AND DEVELOPMENT LENGTH
8 : DEFLECTION AND CRACKING
9 : SIMPLY SUPPORTED AND CANTILEVER BEAMS
10 : SIMPLY SUPPORTED AND CANTILEVER SLABS
11 : CONTINUOUS BEAMS AND SLABS
12 : TORSION
13 : STAIRS
14 : LOAD CALCULATIONS - 1
15 : SIMPLE DESIGNS
16 : FRAMED BEAMS
17 : COLUMNS
18 : DESIGN OF FOUNDATIONS: FUNDAMENTALS
19 : ISOLATED FOOTINGS
20 : COMBINED FOOTINGS
21 : PILE FOUNDATIONS
22 : RETAINING WALLS
23 : FORMWORK
24 : DETAILING OF REINFORCEMENT
APPENDIX A : SHORT QUESTIONS WITH ANSWERS
APPENDIX B : USEFUL TABLES
INDEX
ABOUT THE BOOK

This volume II elucidates the basic principles involved in the analysis and design of Advanced Reinforced Concrete Structures.

The entire subject matter is divided in Twenty Two chapters. These chapters are arranged in four groups.

The first group of chapter one to chapter eight contains the advanced topics in the design of beams, slabs and foundation. The name of the chapters are circular slabs; Ribbed and Waffle slabs; Flat Slab; Domes; Deep Beams and Corbels; beams Curved in Plan; Grid or coffered floors; Circular Raft Foundations.

The second group of chapter nine to chapter sixteen discusses analysis and design of multi-storeyed buildings with an example of an Unbraced building following the latest IS codes on earth quake and ductile detailing. Shear walls are also introduced. It contains chapter viz., multi-storeyed buildings: Fundamentals; Analysis and design for Gravity Loads: an overview; Lateral Loads, Wind loads, Earthquake loads; Analysis of Lateral loads; Ductility considerations; Unbraced building design examples; Walls in buildings.

In the third group of chapter seventeen to chapter twenty one, the topics on water tanks are introduced and designed an accordance with IS: 3370-2009. The Chapters are: Water Tanks; fundamentals; Circular tanks; Rectangular Tanks; Elevated Water tanks; Intze Tanks are given.

The fourth group is chapter twenty two which contains chapter on Element of Prestressed Concrete.

The salient features of the book are:

* Simple, lucid and easy language; * Professional approach to designs; * Step-by-step treatment; * Comprehensive presentation; * Exposition to practical problems; * Excellent detailing

This book now contains:

* 303 Self explanatory and neat diagrams
* 63 Fully solved designs/problem
* 162 Examples and Questions for practice
* 156 Useful tables
* 64 Short questions with answers.

It is hoped that the book should be extremely useful to the Civil Engineering and Architecture students preparing for Degree Examinations of all Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses, as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations. It should also prove of great interest and practical use to the practicing engineers.
The purpose of this book, as the title says, is to explain the concept of the subject matter. The subject is presented in its totality in brief and thereby the reader is given a fair picture of how the subject unfolds and then settles.

The book is by no means a substitute to a textbook, but rather a help to understand one. The book is a natural outcome of an author’s experience as a teacher and a structural engineer, and is written in that spirit. The design codes are followed in general, but the emphasis is not on the codes but rather on understanding the principles of design.

In Part I - ‘Analysis’, attempt is made to explain the behaviour of structures with common examples. Emphasis is made to understand that a structure needs to be approximated to be solved. Further, after understanding how the structure deforms under loads, structures are analyzed by approximate methods. This is also done keeping in mind that solution by approximate method is a great help to verify the solution, especially obtained by computer software.

In Part II - ‘Design’, importance of form, stiffness, safety etc. is emphasized. Before going into the theory of RCC design, the student is made aware of where the placement of reinforcement is required in the structural member. Comparison of different types of sections in steel and RCC are made to make the student aware of the behaviour of structure and economy of design.

In Part III - ‘Conceptual Analysis and Design of Four Structures’, are analyzed, designed and detailed on the principles explained in the book.

It is hoped that the book will satisfy the needs of the students preparing for Engineering Degree examinations in Civil Engineering and Architecture of almost all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional Examinations. It should also be an immense use to practising Civil Engineers.
This book is intended for a beginner with elementary knowledge of structural mechanics and Fortran Programming. Stiffness and flexibility methods are commonly known as matrix methods. Of these, the stiffness method using member approach is amenable to computer programming and is widely used for structural analysis.

The emphasis in the book is on explaining basic fundamentals of this approach and on developing programs. This is achieved through extremely simple style of presentation in lucid language and proceeding in stages from simple to complex structures. Unified theory with a single complex program is totally avoided. Instead, each skeletal structure is discussed in a separate chapter with simple, short and transparent program. Theory is presented in matrix notations along with clear mention of scalar components for proper understanding of the physical quantities. Illustrative solved examples explain data preparation, data file and interpretation of the results. Alternate possibilities of data preparation are mentioned and used. The information about data generation, skyline storage, variable dimensioning and frontal technique is intentionally presented separately at a later stage to help reader in modifying initial simple programs.

The treatment of flexibility and direct stiffness method is limited to introduction of elementary concepts. Transfer matrix method, plastic analysis by stiffness method and sub-structure method are included as additional topics of interest. A chapter is devoted to present an alternate view of stiffness method as a variational approach. Non-linear structural behaviour and techniques commonly adopted to evaluate non-linear response are discussed. Formulae for displacements in beams and restraining actions are included in Appendices A and B. Appendix C discusses various methods of solution of simultaneous algebraic equations. Exercises are included at the end of each chapter.

The book will be useful to undergraduate and postgraduate civil engineering students and also to those preparing for competitive examinations.
This book provides the basic principles and sufficient information on the state of art relating to all facets of manufacturing and production processes in the making of structural concrete. To cater to the needs of the undergraduate level courses, more emphasis is laid on the fundamentals and practice.

Entire book has been revised as per the revisions in various B.I.S. codes related to Cement, Sand, Aggregate, Concrete Mix Design, etc. The chapter on Concrete Mix Design is entirely rewritten. A large number of Multiple Choice Questions have been added in each chapter.

In addition to the traditional concrete technology topics dealing with the principles of concrete and concrete – making materials, the current state of the art of self compacting concrete, special concretes, concreting techniques, non-destructive testing (NDT), repairs and strengthening of concrete structures, fly ash concrete, etc. has been included.

The book incorporates relevant information on numerous Indian standard specifications and codes of practices relating to cement and concrete including the latest revision of IS : 456–2000.

The entire subject matter is canvassed in the chapters like Cement; Types of Cement; Testing of Cement; Aggregates; Water for Construction; Admixtures; Fresh Concrete; Production of Concrete; Strength of Concrete; Elasticity, Creep and Shrinkage; Durability of Concrete; Testing of Hardened Concrete; Quality Control of Concrete; Concrete Mix Design; Special Concretes and Concreting Techniques; Repair and Rehabilitation of Concrete Structures; Fly Ash Concrete.

The book now contains:

* 194 Self explanatory neat diagrams
* 140 Useful tables
* 18 Worked Examples
* 212 Short Questions with Answers
* 287 Objective Questions
* 229 Exercise Questions.

The book should prove to be extremely useful to the Civil and Structural Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S., R.R.B. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
ABOUT THE BOOK

This book is an outcome of extensive experience of the author in a design office as a consulting professional engineer.

The book deals with elements or systems which are significant parts of the “structure” as a whole and some stand-alone structures. Some cogent information or case studies related to the chapter are given as Annexes to the respective chapter.

Also included are several Design Aids and Appendices which the author found immensely useful; hopefully, the design engineer will be at an advantage with these handily available. Whereas most of the discussion in the book is related to RC (Reinforced Concrete) structures, some common and predominantly steel structures have been included viz. portal frames, Vierendeel girders, chimneys and parking structures.

For easy reading, the book is divided into self-contained chapters dealing with each topic. It contains useful tables of data and is profusely illustrated with diagrams and photographs to assist the reader. Fundamental concepts are lucidly presented and derived and empirical formulae given with clarity of underlying assumptions.

Some case histories have been included. One is design of a large span (84.0 m) portal frame. It gives the exact procedure that was followed while designing a large span portal frame, when posed with a peculiar problem during the professional practice. The aim in presenting this “case” is to acquaint the reader with almost all the aspects of such a structure, with emphasis not only on the design but also on execution.

Almost all the salient parameters related to the design and execution are included. The second “case” is of another peculiar problem; making an opening for an additional flue duct in an existing 100 m high RC chimney. The salient information for planning and devising the scheme for execution is given. For both these cases, detailed drawings and the specific instruction sheets prepared for proper and fault free execution are included. These are meant for the students with inquisitive minds and the practicing engineers seeking guidance when faced with not so usual problems.

Some worked examples have been given in the book; these are given at the ends of the respective chapters. These should help the engineer in dealing with the problems during practice.

The book comprehensively covers the subject for degree courses (graduate and post-graduate) in engineering of all the Indian Universities and examinations of professional bodies. Written in a simple language, with illustrative references, it will be useful to students to grasp the subject and to the practicing engineers in designing of the structures.
ABOUT THE BOOK

This well-known text-book provides an up-to-date account of the basic knowledge of all types of Building Materials or Materials of Construction.

The subject matter is expressed in a simple language and practical manner. The treatment is clear, methodical as well as interesting and easy to follow.

In the chapters of miscellaneous materials it now contains, detailed information about magnetic materials, composites and nano materials. In the chapter of material science, the periodic table along with a modern periodic table in colour is discussed in depth.


In Appendix-I, enhanced list of latest B.I.S. codes of important engineering materials is included. Appendix II showing abbreviated terms used in this book are given at the end of the book.

The book now contains 141 self-explanatory and neatly drawn sketches, 80 useful tables and more than 475 questions at the end of the chapters.

The book should prove to be extremely useful to the Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the AMIE, UPSC, GATE, IES and other similar competitive and professional examinations. It is also useful for the preparation of NATA (National Aptitude Test for Architecture), CEPT (Centre for Environmental Planning and Technology), SBST (School of Building Science and Technology), SID (School of Interior Design), AIEEE (Architecture), GTU (Gujarat Technological University) etc. It should also prove of interest to the practising professionals.

CONTENT

1 : PROPERTIES OF ENGINEERING MATERIALS
2 : STONES
3 : CERAMIC MATERIALS
4 : BRICKS
5 : LIME
6 : CEMENT
7 : MORTAR
8 : CEMENT CONCRETE
9 : TIMBER
10 : FERROUS METALS
11 : STEEL
12 : NON-FERROUS METALS AND ALLOYS
13 : CORROSION
14 : GLASS
15 : PAINTS, VARNISHES AND DISTEMPERS
16 : PLASTICS
17 : MISCELLANEOUS MATERIALS
18 : MATERIAL SCIENCE OF METALS
APPENDIX I : B.I.S. CODES FOR IMPORTANT ENGINEERING MATERIALS
APPENDIX II : ABBREVIATED TERMS USED IN THIS BOOK
BIBLIOGRAPHY
INDEX
This well-known text-book provides an up-to-date account of the basic knowledge of Building Construction. The subject matter is expressed in a simple language and practical manner. The treatment is clear, methodical as well as interesting and easy to follow.

The entire subject matter is systematically arranged in the chapters like: Introduction; Functional Planning of Buildings; Important Building Components; Site Investigation and Ground Techniques; Foundations; Deep Excavations; Deep Foundations (Pile Foundations); Cofferdams; Caissons; Stone Masonry; Brick Masonry; Structures in Brickwork; Partitions; Scaffolding, Shoring and Underpinning; Damp-proofing, Water-proofing and Termite-proofing; Cement Concrete Construction; Arches; Lintels; Stairs; Formwork; Doors, Windows and Ventilators; Carpentry and Joinery; Floors and Flooring; Roofs; Painting, Varnishing and Distempering etc.; Structural Steelwork; Acoustics; Fire Protection in Buildings; Ventilation and Air-conditioning; Construction Equipments; CPM and PERT.

Part 1 and Part 2 of this book is merged and all the chapters are rearranged to maintain continuity. The chapters Introduction, Functional Planning of Buildings and Important Building Components are totally new and are included as per new syllabus. Also chapter of Site investigation and ground techniques is separated from the chapter of Foundation. In the chapter of Construction Equipments, almost all the types of construction equipments and machineries which are normally used in civil engineering projects have been included. A few new problems on CPM and PERT are also added.

The book in its 32 chapters now contains:

* 860 Self-explanatory and neatly drawn sketches
* 115 Useful tables
* 60 Solved problems
* 575 Questions at the ends of all the chapters.

The book should prove to be extremely useful to the Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It is also useful for the preparation of NATA (National Aptitude Test for Architecture), CEPT (Centre for Environmental Planning and Technology), SBST (School of Building Science and Technology), SID (School of Interior Design), AIEEE (Architecture), etc. It should also prove of interest to the practising professionals.
Drawing is the language of Engineers and Architects. Building Planning and Drawing is the foundation subject for Civil Engineering students. In this Eighth Revised Edition each topic of the text-book has been arranged in such a way that reader is empowered with an in-depth knowledge in the subject of Building Planning and Drawing. The entire subject is canvassed in the chapters like: Fundamentals of Building Drawing; Fundamentals of Buildings; Site Selection for Residential Buildings; Climate and Its Influence on Building Planning; Orientation of Buildings; Principles of Planning Of Buildings; Building Bye-Laws; Planning of Residential Buildings; Planning of Public Buildings; Different Methods of Construction; Prefabricated Construction; Economical Measures in Building Construction; Green Buildings; Anthropometric Studies; Intelligent Buildings; Construction Management Techniques; Basic Concepts of the Building Elements; Nomenclature of Building Planning and Construction; Standard Guidelines for Building Drawing; Guidelines for Planning and Drawing of Residential Building; Drafting Materials and their Utilization; Conventional Signs and B.I.S. Code Colours; A Few Facts of the Vaastu Sastra; Perspective Drawings; Computer Aided Building Drawings; Typical Building Drawings; Question Bank. The Appendix gives University Examination Questions

The book now in its 27 Chapters and Appendix contains:

* 409 Neatly drawn self-explanatory diagrams
* 50 Plates of important components and different plans of buildings
* 89 Useful Tables
* 26 Solved Problems
* 464 University Type questions are given for preparation of examinations.

A separate chapter as Question Bank includes:

* 307 Short Questions with Answers
* 123 Multiple Choice Questions
* 97 Short Questions.

It is the fervent hope of the authors that this book will satisfy the needs of the Civil Engineering students preparing for the B.Tech/B.E. examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations. It should also be of an immense help to the practising Civil Engineers.
Civil Engineering Drawing is an inevitable subject in learning Civil Engineering and Architecture. This thoroughly revised, extensively enlarged and completely modified third edition presents plenty of new material by adding and updating its contents to enhancing and widening its coverage. Plenty of new drawings are added and all other drawings are redrawn with full details and in scale. The entire book is divided into two parts:

Part I: Civil Engineering Drawing; Part II: Computer Aided Building Drawing.

Three new chapters are added:
1. Earthquake Resistant Buildings;
2. Classification of Buildings;

Topics of Sciography are introduced in the chapter of Perspective Drawings and Sciography.

The outline of the book is:

PART I: CIVIL ENGINEERING DRAWING
1. INTRODUCTION
2. GUIDELINES FOR BUILDING DRAWINGS
3. METHODS OF DRAWINGS
4. SUBMISSION AND WORKING DRAWINGS
5. PERSPECTIVE DRAWINGS AND SCIOGRAPHY
6. PRINCIPLES OF PLANNING
7. ARCHITECTURAL COMPOSITION
8. BUILDING BYE-LAWS
9. EARTHQUAKE RESISTANT BUILDINGS
10. CLASSIFICATION OF THE BUILDINGS
11. PLANNING OF RESIDENTIAL BUILDINGS
12. PLANNING OF INDUSTRIAL STRUCTURES
13. PLANNING OF PUBLIC BUILDINGS
14. MISCELLANEOUS TOPICS

PART II: COMPUTER AIDED BUILDING DRAWING
15. COMPUTER AIDED BUILDING DRAWING

It is hoped that the book will satisfy the needs of the students preparing for the Degree examinations in Civil Engineering and Architecture of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional Examinations. It should also be of an immense help to the practising Civil Engineers.
ESTIMATING, COSTING AND VALUATION
[PROFESSIONAL PRACTICE AND QUANTITY SURVEYING]

RANGAWALA

ISBN : 9789385039058
Size : 170 mm × 235 mm
Binding : Paperback
Pages : 896 + 24 = 920

₹ 470.00

ABOUT THE BOOK

The entire subject of Estimating, Costing, Professional Practice, Quantity Surveying and Valuation is divided in two parts:

Part I : Professional practice and Quantity Surveying; Part II : Valuation.

This edition is thoroughly revised, extensively enlarged and completely modified. Each topic of the book has been arranged in such a way that reader is empowered with an in-depth knowledge of the subject. In this revised and enlarged edition four new chapters have been added. Plenty of new matter, numerous examples and figures have been added as per the latest syllabus of different universities of India. The permutation of some of the sporadic matter have been made to collocate the topics in order.

The outline of the book is:

**PART I : PROFESSIONAL PRACTICE AND QUANTITY SURVEYING**

1 : INTRODUCTION
2 : TYPES OF ESTIMATES
3 : TAKING OUT QUANTITIES
4 : MODES AND UNITS OF MEASUREMENTS
5 : SPECIFICATIONS
6 : MARKET SURVEY
7 : RATE ANALYSIS
8 : ESTIMATES OF VARIOUS TYPES OF BUILDINGS
9 : ESTIMATES OF DIFFERENT R.C.C. STRUCTURES AND FORMWORK
10 : ESTIMATES OF ROOFS AND STEEL STRUCTURES
11 : ESTIMATES OF WATER SUPPLY AND SANITARY WORKS
12 : ESTIMATES OF BRIDGES, CULVERTS AND PIERS
13 : ESTIMATES OF IRRIGATION WORKS
14 : ESTIMATES OF ROAD WORKS
15 : CONTRACTS AND TENDERS
16 : CONDITIONS OF CONTRACT
17 : ARBITRATION
18 : ACCOUNTS
19 : CONSTRUCTION MANAGEMENT AND PLANNING

**PART II : VALUATION**

20 : COST, PRICE AND VALUE
21 : MORTGAGE, FREEHOLD AND LEASEHOLD PROPERTIES
22 : OUTGOINGS AND NET INCOME
23 : EASEMENTS
24 : VALUATION OF LICENSED PREMISES
25 : DEPRECIATION
26 : STANDARD RENT
27 : METHODS OF VALUATION
28 : MISCELLANEOUS TOPICS
29 : VALUATION TABLES
APPENDIX: PRACTICAL QUESTIONS
INDEX
ABOUT THE BOOK

An attempt has been made by the author in this treatise to explain in simple language the basic principles of Valuation of Real Properties. The subject matter is characterized by the clear, methodical and also step-by-step treatment. The presentation is comprehensive and easy-to-follow.

The subject matter of this edition has been arranged in 19 chapters, such as: Value, Investment in Real Property, Interests in Real Property, Methods of Valuation, Outgoings, Depreciation, Valuation of Licensed Premises, Valuation of Life Interests, Valuation of Rating, Valuation of Agricultural Lands, Finance for Investment in Real Properties, Valuation Tables, Miscellaneous Topics, Easements, Standard Rent, Compulsory Acquisition of Land, The Transfer of Property Act, Urban Land Ceiling Act, Typical Problems.

Appendix I deals with 34 important judgements and decisions pertaining to the subject. Appendix II contains 8 useful Valuation Tables. Appendix III provides 37 Questions and Opinions/Answers.

This edition contains

* 134 Typical solved problems;
* 213 Questions at the end of all the chapters;
* 50 Useful tables;
* 12 Neatly drawn self-explanatory diagrams.

The subject of valuation has attained a high degree of importance at present and it is now accommodated in the syllabi of most of the Universities and Institutions.

It is hoped that the book in the present form would satisfy the need of the Civil Engineering students preparing for Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals. It will also serve as the most useful reference book for practising valuers of real estates, tax consultants, lawyers, advocates, etc.
An attempt has been made by the authors in this book to explain the general principles of the subject of Town Planning. The subject matter is expressed in a simple language and practical manner. The treatment is clear, methodical as well as interesting and easy to follow.

The entire subject matter is canvassed in the chapters like:
* Introduction
* Town Planning Surveys
* Zoning
* Housing
* Slums
* Parks and Playgrounds
* Industries
* Public buildings
* Re-planning existing towns
* Building bye-laws
* Development plan
* Urban roads
* Traffic management and
* Miscellaneous topics.

Appendix I and Appendix II discuss about India’s best planned cities — Chandigarh and Gandhinagar respectively. Appendix 3 is providing latest information of the *Recent Planned Cities of India*

- **Lavasa** – a planned hill station near Pune, Maharashtra;
- **GIFT city** – a global financial and IT services hub near Gandhinagar, Gujarat;
- **Dholera Special Investment Region (DSIR)** – a global manufacturing and trading hub, near Dholka, Gujarat.

The book now contains:
* 64 Self-explanatory neat diagrams
* 16 Useful tables and more than
* 270 Questions at the end of the chapters.

The book should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
The entire subject of Water Supply and Sanitary Engineering including Environmental Engineering is divided into three parts:

1. Water Supply Engineering;
2. Sanitary Engineering;

The first part deals with the fundamentals of Water Supply Engineering. It discusses the whole science of water supply engineering relating to the quantity and quality of water, sources of water supply, pumps for water supply projects, treatment of water, coagulation of water, filtration of water, disinfection of water, water softening, collection and conveyance of water, distribution system of water, pipe appurtenances, water pollution control, water management, radioactivity and water supplies, etc.

The second part of the book deals with the fundamentals of Sanitary Engineering. It discusses the topics such as collection and conveyance of refuse, waste water, quantity and quality of sewage, construction and design of sewers, sewer appurtenances, sewage pumps, house drainage, natural methods of sewage disposal, primary treatment of sewage, filtration of sewage (secondary treatment), activated sludge process, sludge treatment and disposal, miscellaneous methods of sewage treatment, miscellaneous topics of sanitary engineering, etc.

The third part deals with the fundamentals of Environmental Engineering. It discusses the topics such as environment, ecology and ecosystem, air pollution, noise pollution, natural resources and population, miscellaneous topics of environmental engineering and environmental legislation.

The Appendix A demonstrates the Typical Design of a Sewage Treatment Plant and Appendix B describes some of the Terminology of the subject.

The book in its 40 chapters and two appendices includes:

* 278 Self explanatory and neat diagrams;
* 152 Illustrative problems;
* 68 Useful tables;
* 690 Questions at the end of chapters.

The book should prove to be extremely useful to the Civil Engineering and also Environmental Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
This is a single comprehensive book of its kind designed primarily to provide a clear-cut, contemporary and stimulating text in a convenient form for the first year engineering students. It provides quite modern and up-to-date coverage of the science and art of Civil Engineering which are changing rapidly. With the inclusion of the worked out examples, the book is almost a ‘self-teaching’ text material.

The book has been divided into 5 sections namely Engineering Materials, Building Construction (including Earthquake Resistant Structures), Surveying and Levelling, Transportation engineering and Environmental Engineering (including Global Environmental Problems).

It begins with an Introduction to Engineering and spreads in 45 chapters. It contains:

* 700 Self-explanatory and neatly drawn diagrams
* 145 Useful tables
* 425 Questions at the end of the chapters

A detailed list of various signs and symbols used in civil engineering drawings (as per Indian standards) has been included in the Appendix. A very extensive glossary of the key words used in civil engineering has been prepared which would greatly help the students in learning the fundamentals of the subject. Search engine, provided at the end, will facilitate the students to quickly find the topics of their interest.

Almost all topics and sub-topics consist of ‘memory maps’ – the first of their kind. These memory maps consist of key words and will help the readers to crystalize the important points in their minds, thereby helping them to structure their answers in the examinations.

The book almost covers the syllabi prescribed by the various Universities of India for the subjects ELEMENTS OF CIVIL ENGINEERING/BASIC CIVIL ENGINEERING and partially that of MATERIAL SCIENCE and CIVIL ENGINEERING GRAPHICS. It would be of immense help to the students preparing for Degree, Diploma or A.M.I.E. Examinations and various Boards of Technical Education. It should also prove a great asset to the students preparing for U.P.S.C. examinations. Questions from various university examination papers and competition examinations are discussed in the respective chapters. Neatly drawn sketches should definitely make the understanding of the students crystal-clear.
This book aims at presenting the topics of *Elements of Civil Engineering* written in a simple manner. The subject-matter is characterized by comprehension as well as methodical and easy-to-follow style. The book contains total Six Sections as mentioned below:

**Section I : Scope of Civil Engineering** (Chapter 1)

**Section II : Surveying**

- Introduction to Surveying
- Scales
- Linear Measurements of Distances
- Chain Surveying and Ranging
- Cross-Staff Chain Surveying and Instruments
- Compass Survey
- Leveling
- Contouring
- Computation of Areas
- Computation of Volumes
- Modern Techniques of Surveying

**Section III : Construction Materials**

- Properties of Engineering Materials
- Stones
- Ceramic Materials
- Bricks
- Lime
- Cement
- Sand
- Mortar
- Cement Concrete
- Timber
- Ferrous Metals
- Steel
- Non-Ferrous Metals and Alloys
- Glass
- Paints, Varnishes and Distempers
- Plastics

**Section IV : Elements of Building Construction**

- Building Planning
- Building Construction

**Section V : Water Resources Development**

- Elementary Hydrology
- Water Requirements and Its Conservation
- Sources of Water

**Section VI : Transportation Engineering**

- Introduction to Transportation Engineering
- Traffic Engineering
- Typical Traffic Signs

**Appendix I : GTU Examination Papers**

**Index**

Every topic in this text book is explained in very simple and lucid language. All 36 chapters contain sufficient self explanatory matter, neat sketches, solved and unsolved examples and questions asked in G.T.U. Exams. The students will be able to prepare themselves by solving typical questions given at the end of each chapter. Previous years’ examination papers (with solution) of G.T.U. are given at the end of book for better preparation.

**Salient features of this book are:**

- 588 Self-explanatory and neatly drawn sketches;
- 87 Illustrative problems;
- 85 Useful tables;
- 640 Typical questions at the end of the chapters;

The text-matter has been arranged systematically according to the curriculum developed by the Gujarat Technological University (G.T.U.) for the subject ELEMENTS OF CIVIL ENGINEERING [Subject code 110004 (Revised)] for the First year Degree Engineering students [Common to All Branches] and also it should prove to be extremely useful to the Engineering students preparing for the Degree Examinations of all the Indian Universities. Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove great of interest and practical use to the practising professionals.
DR. N. P. SINGH
T. BANERJEE, M. J. DHALAWALA

Edition : 1
th Edition : 2015
ISBN : 9789385039034
Size : 170 mm × 240 mm
Binding : Paperback
Pages : 272 + 16 = 288

This text-book aims at presenting the topics of Irrigation Engineering in a simple manner. Each topic of the book has been arranged in such a way that reader is empowered with in-depth knowledge of the subject. It lays stress on clarity of concepts and enhancement of understanding of design principles of Irrigation Engineering Structures.

The book is arranged into 5 modules and 7 chapters

Module 1: *Chapter 1* gives Introduction of the subject of Irrigation Engineering. It conceptualizes soil water plant relationship and also highlights history of irrigation development in India.

*Chapter 2* is on Water Requirements of Crops.

Module 2: *Chapter 3* covers the topics on the Methods of Irrigation. *Chapter 4* discusses Irrigation Channels (Canals) and explains procedures for their design.

Module 3: *Chapter 5* is about Diversion Head Works and gives detailed design procedure for the sloping glacis weir with solved examples.

Module 4: *Chapter 6* gives Cross Drainage Works including detailed designing of canal transitions.

Module 5: *Chapter 7* covers the topic of Canal Regulation Works.

The Appendix I gives University Paper with Answers. In Appendix II Photographs of Cross Regulators and Head Regulators are given. In Appendix III Photographs of Regulation Structures are provided.

At the end of each chapter a summary is provided. The book also contains

* 147 Self explanatory and neatly drawn drawings
* 61 Numerical problems from past GTU question papers and other numerical problems in each chapter
* 39 Useful Tables
* 89 Questions at the end of all the chapters.

This book is designed to cover the syllabus of subject of Irrigation Engineering (Subject code: 170602) being taught in the seventh semester of bachelor of civil engineering course under Gujarat Technological University (GTU). The book should also prove to be useful to the Engineering students preparing for the Degree Examinations of all the Indian Universities, having similar syllabus as GTU. Understanding the design principles helps in developing the analytical ability of the reader. It also lays the foundation for becoming a design professional in the field of Irrigation Engineering.
ABOUT THE BOOK

This text-book provides an up-to-date knowledge of the basic principles of Surveying and Levelling. The subject matter is canvassed along with theory, variety of examples, various types of survey techniques; survey instruments used in the field; measurement of distances, both vertical and horizontal; the direction of lines or angles between the lines, where as various levelling instruments, principles, techniques, methods applied in levelling are given in this text book. The subject matter is expressed in a simple language and practical manner. The treatment is clear, methodical as well as interesting and easy to follow.


Appendix I contains Question Bank and Solved Problems. Total 215 theory as well as numerical questions mostly asked in viva and written examination of G.T.U. and other universities are included. Appendix II contains 181 Multiple Choice Questions and Appendix III showing Abbreviated Terms used in this book are added at the end of the book.

The book now contains:

* 404 Self-explanatory and neatly drawn sketches
* 218 Solved problems
* 215 Theory as well as numerical questions
* 66 Useful tables
* 480 Questions at the ends of chapters.

The book should prove to be extremely useful to the Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.

CONTENT

1: INTRODUCTION
2: SCALES
3: LINEAR MEASUREMENTS OF DISTANCES
4: CHAIN SURVEYING AND RANGING
5: CROSS STAFF CHAIN SURVEYING AND INSTRUMENTS
6: COMPASS SURVEY
7: LEVELLING
8: CONTOURING
9: PLANE TABLE SURVEY
10: COMputation of AREAS
11: COMputation of VOLUMES
12: MINOR INSTRUMENTS
13: THEODOLITE
14: PERMANENT ADJUSTMENTS OF LEVELS
15: TACHEOMETRIC SURVEYING
16: CIRCULAR CURVES
17: TRANSITION CURVES
18: VERTICAL CURVES
19: FIELD ASTRONOMY
20: THEORY OF ERRORS
21: SETTING OUT WORKS
22: HYDROGRAPHIC SURVEYING
23: PHOTOGRAPHIC SURVEYING
24: MODERN TECHNIQUES OF SURVEYING

APPENDIX I: QUESTION BANK AND SOLVED PROBLEMS
APPENDIX II: MULTIPLE CHOICE QUESTIONS
APPENDIX III: ABBREVIATED TERMS
INDEX
This book is an outcome of extensive experiences of practicing engineers who have worked in the professional field as well as those of research and teaching. The students and the practicing engineers, through the book, can share the knowledge and experience acquired during their long professional careers.

An engineer must know the basic design aspects even if he opts to be a construction engineer or a manager and, more so if he prefers to be a designer or a research worker. This has been kept in view.

The entire subject matter is treated in the following 5 parts:

Part I: General and Index Properties; Part II: Derived Properties; Part III: Field Investigations; Part IV: Designs; Part V: Miscellaneous.

Keeping in mind the technological advancement and changing techniques, new chapters on Instrumentation, Shallow Foundations, Deep Foundations, Tiebacks and Anchors, Reinforced Earth, Slabs on Grade, and Soil Stabilization have been added in this edition. Also included are some useful case histories and a history in brief of Soil Mechanics.

Theoretical analysis has been presented with clear formulation of the underlying assumptions. Equations have generally been developed from the first principles and illustrated by suitable examples. Laboratory tests have been briefly described for understanding the testing procedures and for the appreciation of their merits. Field tests and their essential correlations are given in so far as they are useful to a design engineer.

Following salient features should facilitate better understanding of the related matter of the book:

* 317 neatly drawn self-explanatory figures; * 51 photographs; * 173 useful tables; * 90 illustrative worked examples; * 264 exercises at the ends of chapters.

Other cogent information has been included in the form of new Appendices. Système Internationale d’Unités, generally referred to as SI Units, has been introduced in the Appendix VI. And, the relevant Indian Standards have been grouped together in Appendix VII. These should be useful to the students as well as to the practicing engineers.

The book fully covers the syllabi of Soil Mechanics and Foundation Engineering for Civil Engineering students preparing for the Degree courses and also partly covers the post-graduate curriculum of almost all the Indian Universities. It will be useful to students of Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It is, nevertheless, written with a design bias and it is intended that this book is a reliable and useful companion in professional career.
The aim to prepare this manual to understand fundamental principles, concepts and significance of various experiments as per existing laboratory experimental practice and evaluation procedure in the subject fluid mechanics and fluid machinery.

The manual explains the procedure for various experiments including principle, apparatus, experimental set up, handling of apparatus, range and accuracy of observations, model calculation, engineering significance, practical applications for each experiment in fluid mechanics and fluid machinery.

This manual also gives comprehensive view about how to perform various experiments, how to presentation of experiment results in the form of laboratory report and how to evaluate performance of a student in the laboratory and how to implement experiment results in field. Also it provides to the students the essential information required to understand fundamental concepts, to carry out the experiment and to implement the experiment results in the field. It improves skills in experimentation, presentation and implement of experimental results in the field.

It will help to take accurate observations and analysis of experimental results. Question bank given in separate chapter is useful to students for better understanding concepts and answering viva questions.

This manual also provides necessary valuable information regarding planning and maintenance of Fluid Mechanics and Machinery Laboratory, which helps to the faculty members in setting their own fluid mechanics and machinery laboratory.

This book also contains some other useful information like, SI and conversion table, physical properties units of water, air and common liquids, dimensionless number and various graphs related to viscosity, friction factors and discharge.

Student’s performance evaluation procedure has also been discussed in a separate chapter, which is very useful for teachers.

It is hoped that the book will satisfy the needs of the Engineering students preparing for the Degree examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional Examinations. It should also be of an immense help to the practicing Engineers.
This book provides profound knowledge of various techniques of Construction Planning and Management. The study will enhance the performance of various aspects of complex construction projects. The entire text-matter has been arranged systematically into twenty-four chapters. The outline of this book is:

Chapter 1 and 2 presents topics on Construction Management and Economy as well as Managerial Organisation.

Chapter 3 discusses Job layout and Project Supervision.

Chapter 4 consists of Construction Accidents and Safety Measures.

Chapter 5 gives Conventional Methods of Management Techniques such as Gantt or Bar Charts; Mile-stone Charts; Line of Balance (LOB) Techniques.

Chapter 6 about Introduction to Network Techniques.

Chapters 7, 8, 9, 10 elaborates topics on Network techniques: Critical Path Method (CPM); Cost Optimization; Updating Resources Planning Allocation and Scheduling, respectively.

Chapter 11 discusses Programme Evaluation and Review Technique (PERT).

Chapters 12, 13, 14, 15, 16, 17 & 18 discuss the Construction Labour; Construction Materials; Construction of Tall Buildings; Erection of Steel Structures; Construction of Dam; Construction of Tunnels; Compressed Air respectively.

Chapter 19 & 20 discuss Cash Flow and Economic Analysis as well as Economics of Construction Equipment respectively.

Chapter 21, 22, 23 & 24 related to Contracts, Tenders and Contract Management; Conditions of Contract; Arbitration; Accounts respectively.

The entire book comprise of following:

- 144 Self explanatory and Neatly drawn sketches
- 128 Useful Tables
- 106 Solved Problems
- 350 Typical questions at the end of the Chapters.

The book should prove to be extremely useful to the Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
Modern construction activities involves complex processes which requires knowledge of both construction and management. For this, engineers and technicians with managerial qualities are highly essential. This text-book will be helpful to the reader to be conversant with the elementary principles about construction management and organization; economic activities associated with the construction industry as a whole.

The entire subject matter is systematically arranged in a lucid manner, easy-to-follow style and in chapters like: Introduction; CPM and PERT; Construction of Dam; Construction of Multi-Storeyed Buildings; Erection of Steel Structures; Tunnelling; Compressed Air; Construction Equipments; Construction Accidents; Management and Organization; Construction Labour; Construction Materials; Economic Analysis; Miscellaneous Topics; etc.

Now, the topics of the subject are covered in 14 well-arranged chapters and therein, it contains:

- 104 Self-explanatory and neat diagrams
- 56 Solved problems
- 81 Useful tables
- 248 University-type questions at the end of each chapter.

It is hoped that the books will satisfy the needs of the civil Engineering students preparing for the Degree examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E, U.P.S.C., G.A.T.E., I.E.S and other similar competitive and professional Examinations. It should also be of an immense help to the practising Civil Engineers.
ABOUT THE BOOK

In the subject of Transportation Engineering, study of Railway Engineering is essential. This well-known text-book now in its Twenty Sixth Thoroughly Revised and Enlarged Edition, provides an up-to-date account of the basic principles on various functions and working of Railways. Its excellent material fills a significant void in the literature of Railway Engineering.

The entire subject is systematically arranged in chapters like Introduction; Railway Track Gauges; Surveys and Alignment of Railway Lines; Railway Traction; Rails; Ballast; Earthwork and Drainage for Railway Track; Plate-laying; Track Fittings; Geometric Design of a Track; Resistance to Traction; Points and Crossings; Railway Stations and Yards; Railway Station Machinery; Signalling; Interlocking; Maintenance of Track; Tunnelling; Rapid Transit System (Metro Rail System); Materials Management.

Appendix I: Units Of The Indian Railway;
Appendix II: Training Institutions of the Indian Railways;
Appendix III: Famous Indian Trains;
Appendix IV: Abbreviated Terms; and
Appendix V: Multiple Choice Questions.

The topics of the subject are covered in 21 well-arranged chapters and 5 appendices; it now contains:

* 242 Self-explanatory and Neatly Drawn Diagrams
* 26 Useful Tables
* 29 Solved Illustrative Problems
* 191 Multiple Choice Questions
* 394 Questions at the end of the chapters.

The book should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
This book aims at presenting the topics of Railway, Bridge and Tunnel Engineering written in a simple manner. The subject-matter is characterized by comprehension as well as methodical and easy-to-follow style.

The Section I: Railway Engineering is well divided in to Thirteen chapters including Introduction; Railway track gauges; Surveys and alignment of railway lines; Railway traction; Rails; Sleepers; Ballast; Track fittings; Geometric design of a track; Resistance to traction; Points and crossings; Railway stations and yards; Signalling and interlocking; etc.

The Section II: Bridge Engineering is well divided in to Nine chapters including Introduction; Bridge foundations; Sub-structures; Classification of bridges; Bridge flooring; Bridge bearings; Design of bridges; Construction and erection methods of bridge super-structure; Maintenance of the bridges; etc.

The Section III: Tunnel Engineering is well divided in to Nine chapters including General aspects of tunnelling; Alignment of a tunnel; Shafts and portals; Tunnelling in hard rock; Tunnelling in soft ground; Tunnel lining; Lighting, ventilation and dust control in tunnels; Drainage of tunnels; Safety in tunnel construction; etc.

The Appendix I gives Abbreviated Terms and Appendix II gives five solved examination papers of GTU.

Salient features of this book are:

* 346 Self-explanatory and neatly drawn sketches;
* 32 Illustrative problems;
* 40 Important useful tables;
* 590 Typical questions at the end of the chapters.

The text-matter has been arranged systematically according to the curriculum developed by the Gujarat Technological University (G.T.U.) for the Sixth Semester students of Civil Engineering (Subject code: 160603) and also it should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove great of interest and practical use to the practising professionals.
ABOUT THE BOOK

This book aims at presenting the topics of Bridge Engineering written in a simple manner. The subject-matter is characterized by comprehensive as well as methodical and easy-to-follow style.

Out line of Sixteenth Revised and Enlarged edition of this popular and highly acclaimed book of Bridge Engineering are as below:

Chapter 1 gives Introduction of the subject.

Chapters 2 and 3 of Foundation, expanded and divided in two separate chapters. Foundation I: Spread and Pile Foundations and Foundation II: Caissons and Cofferdams.

Chapter 4 explains Sub-structures such as Abutments, Piers, Wing Walls etc.

Chapter 5 gives variety of Fixed-Span Super-structures – Various Types of Bridges such as Simple, Cantilever, Arch, Bow-string Girder type, Rigid Frame, Suspension, Cable-stayed bridges.

Chapter 6 consists Low cost Bridges: Movable-Span Super-structures.

Chapter 7 consists Low cost Bridges: Culverts and Causeways.

Chapter 8 consists Low cost Bridges: Timber or Temporary Bridges.

Chapter 9 discusses Flooring. It includes Factors, Requirements of Floorings, Types of Floorings and various Flooring Materials etc.

Chapter 11 mention the Broad Outline of Loading on Bridges.

Chapter 12 This newly added chapter gives knowledge on Construction and Erection Methods of Bridge Super-structure.

Chapter 13 is newly added chapter on Maintenance of the bridges.

Chapter 14 give various Miscellaneous Topics such as Afflux; Approaches of Bridge; Bridge Architecture, Clearance and Freeboard, Combined Road and Railway Bridges; Double-decker Bridge; Economic Span of Bridge, Grip Length, Handrails, Joints of Bridge; M.F.D. or H.F.L.; River Training Works etc.

In Appendix, Marvellous Bridges of the world, which gives technical information, such as India’s latest Bandra-Worli Sea Link, Mumbai, India; The Golden Gate Bridge, San Francisco, USA; Tower Bridge, London, UK, Sundial Bridge, California, USA and Zhangjiajie Grand Canyon Glass Bridge, Chaina.

The text-matter has been arranged systematically into Fourteen Chapters assisted by:

* 224 Self-explanatory and neatly drawn sketches;
* 12 Illustrative problems;
* 20 Important useful tables;
* 251 Typical questions at the end of the chapters.

The book should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
ABOUT THE BOOK

This text-book aims at presenting the fundamental principles of Bridge Engineering. It is characterised by the clear, methodical and step-by-step treatment of the subject.

Salient features of this book are: numerous diagrams, photographs, brief description and clear exposition. Typical questions follow each chapter.

Throughout this book the chief aim has been to illustrate the subject matter fully with suitable diagrams and by direct treatment of the subject matter.

The book is written entirely in metric system of units.

It is hoped that this revised edition will prove useful to students preparing for degree examinations in civil engineering of all the Indian Universities, Diploma Examinations of the various Technical Boards, Certificate Courses, and also Associate Membership Examinations of professional bodies. It should also prove of interest and of practical value to practising engineers.
In the subject of Transportation Engineering, study of Harbour, Dock and Tunnel Engineering is essential. This well-known text-book now in its twenty-ninth thoroughly Revised and Enlarged edition, concisely formulates the basic principles of the subject matter in simple, lucid and easy language presented in two sections.

Section I – Harbour and Dock Engineering

is well-divided in twelve chapters. It discusses the topics on Harbour and Ports; Natural Phenomena: Tides, Wind and Waves; Protection facilities: Mound Breakwater, Wall Type Breakwater, Special Type Breakwater such as Floating Type, Hydraulic Type and Pneumatic Type Breakwater; Planning and Layout of Ports; Various other Facilities such as Docking Facilities; Repairing Facilities; Approach Facilities; Loading Unloading Facilities; Storing Facilities; Dredging Facilities and Guiding Facilities.

Section II – Tunnel Engineering

is also well-divided in twelve chapters. It discusses the topics on General Aspects of Tunnelling; Stages in Tunnel Construction; Shafts and Portals; Soil Classification and Various Tunnelling Methods for Soft Soils; Tunnelling in Water Bearing Soils; Tunnelling in Rock; The New Austrian Tunnelling Method (NATM); Tunnel Lining; Drainage of Tunnels; Lighting, Ventilation and Dust Control in Tunnels; and Safety in Tunnel Construction.

The Salient Features of this book are

243 Self explanatory neatly drawn sketches, photographs and more than 321 examination questions at the end of each chapter.

The book in the present form will prove to be extremely useful to the students preparing for the Degree examinations in Civil Engineering of all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S., and other similar competitive and professional examinations. It should also be an immense use to practicing Civil Engineers.
This book is an outcome of extensive experience in design office and of construction. Both the authors have been actively associated with academics as well.

The book deals with all the normal port aspects in a holistic way. Topics, such as “Ship Features”, “Traffic Forecasting and Hinterland”, “Cargo Handling Equipment”, “Construction Materials” etc. are essential back-ground knowledge for any dock and harbour engineer. These too have been covered.

For easy reading, the book is divided into self-contained chapters dealing with each topic. It contains useful tables of data and is profusely illustrated with diagrams and photographs to assist the reader. Fundamental concepts are lucidly presented and derived and empirical formulae given with clarity of underlying assumptions.

Two case histories have been dealt in this Revised Edition. One is design of a waterfront structure, a Berth or a Wharf. It gives the exact procedure that was followed while designing a waterfront structure viz. a berth, in a professional practice. The aim in presenting this “case” is to acquaint the readers to almost all the aspects of a berth, with emphasis on the design. Almost all the design calculations along with the stress/force diagrams are included. The second “case” is of another waterfront structure, a Sea Water Intake Station. The salient information for determining the guiding dimensional parameters of such a sea water intake station is given. These are meant for the students with inquisitive minds and the practicing engineers seeking guidance when faced with not so usual problems.

Other cogent information has been included in the form of Appendices. Some of these are: “Ships for LPG – LNG and Other Bulk Liquids”, “Properties of Liquids and Liquefied Gases”, “Details of Selected Ships”, “Coastal Regulation Zone” and “Port Charges”. These should be useful to the students as well as to the practising engineers.

The book comprehensively covers the subject for degree courses in engineering of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. Written in a simple language, with illustrative references, it will be useful to students to grasp the subject and practising engineers in designing.

**CONTENT**

1 : SEA AND TIDES
2 : HYDROGRAPHIC SURVEYS AND CHARTS
3 : WINDS, WAVES AND CYCLONES
4 : SILTATION AND EROSION
5 : INVESTIGATIONS AND MODEL TESTS
6 : SHIP FEATURES RELATED TO PORT PLANNING
7 : TRAFFIC FORECASTING AND HINTERLAND
8 : HARBOUR LAYOUT
9 : CHANNEL, BASIN AND BERTHS
10 : BREAKWATERS
11 : WHARVES
12 : JETTIES, DOLPHINS AND MOORINGS
13 : BERTHS FOR CRUDE OIL AND PETROLEUM PRODUCTS
14 : RO-RO FERRY SERVICE
15 : LOCKS
16 : SHORE PROTECTION WORKS
17 : DRY DOCKS AND SLIPWAYS
18 : CARGO HANDLING EQUIPMENT
19 : APRONS, TRANSIT SHEDS AND WAREHOUSES
20 : SUPPORTING FACILITIES AND ANCILLARIES
21 : NAVIGATIONAL AIDS
22 : DREDGING AND DREDGERS
23 : CONSTRUCTION MATERIALS AND METHODS
24 : DESIGN OF A BERTH (WHARF) – A CASE STUDY
25 : SEA WATER INTAKE STATION – A CASE STUDY

**APPENDIX I** : SHIPS FOR LPG - LNG AND OTHER BULK LIQUIDS

**APPENDIX II** : PROPERTIES OF LIQUIDS AND LIQUEFIED GASES

**APPENDIX III** : EXPLOSIVES AND HAZARDOUS CARGOES

**APPENDIX IV** : DETAILS OF SELECTED SHIPS

**APPENDIX V** : COASTAL REGULATION ZONE (CRZ)

**APPENDIX VI** : GENERAL REQUIREMENTS FOR BERTHS AS PER IS:4651

**APPENDIX VII** : PORT CHARGES

**APPENDIX VIII** : ANGLES OF INTERNAL FRICTION, UNIT WEIGHS AND LIQUIDITY FACTORS OF SOME MATERIALS

**APPENDIX IX** : METRIC CONVERSIONS

**APPENDIX X** : BRITISH AND METRIC EQUIVALENTS

**APPENDIX XI** : SI UNITS

**APPENDIX XII** : SOME RELEVANT INDIAN STANDARDS REFERENCES AND FURTHER READING ACKNOWLEDGEMENTS

**BOOKS ON CIVIL / TRANSPORTATION ENGINEERING**
ABOUT THE BOOK

This book aims at presenting the topics of Airport Engineering written in a simple manner. The subject-matter is characterized by comprehensive as well as methodical and easy-to-follow style, reflecting the latest FAA, ICAO, IATA and AAI recommendations and guidelines. Latest technique of GPS air traffic control has been highlighted in detail. Modern concept of Free Flight is also added.

The outline of the book is:

Chapter 1: Introduction to the subject of Airport Engineering, Airport terminology, Open skies policy and more.
Chapter 2: Explains Airport Survey
Chapter 3: Discuss Airport Planning
Chapter 4: Elucidates Planning and Design of Terminal Area
Chapter 5: Gives main aspects connected with the Runway Design.
Chapter 6: Gives features associated with Taxiway Design
Chapter 7: Newly added chapter on Aviation Fuel
Chapter 8: Gives aspects and various methods of the Airport Pavement Design
Chapter 9: Gives topics on Airport Grading and Drainage
Chapter 10: Explains Visual Aids required for aircraft
Chapter 11: Describes Air Traffic Control (ATC) systems
Chapter 12: Discuss topics on Heliports and Stolports.

The text-matter has been arranged systematically into Twelve Chapters and various complicated topics are explained in lucid language assisted by:

* 114 Self-explanatory and neatly drawn sketches;
* 21 Illustrative problems;
* 35 Important useful tables;
* 254 Typical questions at the end of the chapters.

The book should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
This text-book deals with the design methods of construction, planning, alignment and maintenance of all types of highways; and various other topics such as traffic management, road making machineries, drainage, arboriculture and lighting, highway economics, etc. connected with the subject of Highway Engineering.

The book is divided into sixteen well-arranged chapters: therein it contains –

* 280 Self-explanatory and neatly drawn sketches
* 31 Illustrative problems
* 54 Important tables
* 316 Typical questions at the end of each chapter.

The salient features of the book are:

* Comprehensive presentation
* Clear exposition and brief description
* Step-by-step treatment
* Simple and lucid language.

The book should prove to be extremely useful to the Civil Engineering students preparing for the Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
ABOUT THE BOOK

**KŚM yrdr प्रभाग 1 'C' भाषा म भूमि अवधारित ह। आ पुस्तक क ह विद्यार्थी विषयांतर तक्षत्वांत अने क्षमता ज्ञान धारी ह, क प्रस्तुत करणे 11 प्रक्रिया अने 5 पृष्ठांश (Appendix) आणि आवंती ह, वेंक प्रक्रिया आवंती मुदत दर्वण लागणां नानांनी नियिंत भने पण उद्देश्यांनी समजणारं आहे ह।

“Learning by concept” संघात अनुबंध आणि पुस्तकांच्या वाक्यपदांसाठी नीती मुळांचे हे:

* 527 Examples (प्रेथम फॅक्ट) आपसमधून अपेक्ष वेंके ह
* 79 Uपणयोगी टेस्ट संग मुदतांच्या सरण समजणूकी वेंके ह

**376 वाक्यपद-प्रति, वेंक प्रक्रिया अनेकांना विद्यार्थी पौर्णांच्या कल्लरुळून करणे वेंके अपरिश्वान आपसमधून नाही हे मुळांचे हे।

watch, output, trace into, step over, getch(), clrscr(), gotoxy(), kbdhit(), delay(), time structure, merits & demerits of string input library function वध के वर्णण अपरिश्वान मुदतांच्या वेंके सो प्रयोगकर ज आ पुस्तकमधून क्रयांमधून आहे ह. टॉपिके पर 'C' fundamentals, operators, input-output library functions, loops, string handling library functions, pointers, multifile programming, file handling functionalities अने आ पुस्तकमधून क्रयांमधून अपेक्ष वेंके या पाडपृष्ठांमधून क्रयांमधून आहे ह. ओटोडेट ओटोडेट प्रक्रिया महत्त्वाचे 55 प्रारंभ प्रयोग आपसमधून वेंके अनेकांना विद्यार्थी प्रक्रिया आवंती वाक्यपदांसाठी जपत करणे वेंके ह।

Appendix A – Algorithm अपेक्ष वेंके Flow-chart,
Appendix B – Level Programme,
Appendix C – ASCII Character Set,
Appendix D – Operators precedence table अपेक्ष
Appendix E – Library Functions अपेक्ष वेंके पूर्णां रीती अपेक्ष वेंके प्रयोगी पूर्णांक एकांकांमधून आहे ह.

आ पुस्तक प्रोग्रामिंगाच्या शृंखला कर्नार तथा अनुसूची प्रक्रिया अपेक्ष वेंके माने पूर्ण ज उपयोगी नवीने वेंके त प्रमाण अपेक्ष वेंके ह. आ पुस्तक ओप्टिसिदर उपयोगी अपेक्ष वेंके विवरणांतर उपयोगी आणि पोस्ट ऑप्टिसिदर उपयोगी वेंके, B.C.A., M.C.A., P.G.D.C.A., I.T.I., विकास, पत्रिका यांना मंदीमन्त्रण विवरणांतर उपयोग प्रावीं ऑप्टिसिदर इंस्ट्रक्ट्यूटमधून शृंखला दत्त विवरणांनी माने पूर्ण ज उपयोगी हे।

CONTENT

1 : 'C' FUNDAMENTALS
2 : OPERATORS AND INPUT-OUTPUT FUNCTIONS
3 : STATEMENT, BRANCHING AND LOOPING
4 : 'C' FUNCTIONS – USER DEFINED FUNCTION
5 : STORAGE CLASSES
6 : ARRAY
7 : POINTERS
8 : STRUCTURES AND UNIONS
9 : WORKING WITH FILES
10 : INTRODUCTION TO OBJECT ORIENTED PROGRAMMING

11 : SPECIAL PROGRAMS
APPENDIX A : FLOWCHART AND ALGORITHM
APPENDIX B : BIT OPERATORS
APPENDIX C : ASCII CHARACTER SET TABLE
APPENDIX D : OPERATORS PRECEDENCE TABLE
APPENDIX E : STANDARD LIBRARY FUNCTIONS
C language is very important in Computer Programming. This book is divided into 12 chapters and 5 Appendix. So that students can get detailed, systematic and step by step knowledge of the subject. In each chapter all the points are explained in simple language with illustrations.

**Salient features of the book are as follows:**

- **527 Examples (including programs with output)**
- **79 Important tables**
- **376 Exercise Questions.**

watch, output, trace into, step over, getch(), clrscr(), gotoxy(), kbhit(), delay(), time structure, merits and demerits of string input library function are discussed for the first time in this book.

In addition to this, ‘C’ fundamentals, operators, input-output library functions, loops, string handling library functions, pointers, multifile programming, file handing functions are discussed in detail in easy to understand style.

In Chapter 10 Object oriented programming is discussed in detail and in Chapter 11 special programs are given. By studying these programs, programmer can become expert in ‘C’ language.

In this book following Appendices are explain in detail:

- **Appendix A** – Algorithm and Flow-chart.
- **Appendix B** – Bit level Programme
- **Appendix C** – ASCII Character Set
- **Appendix D** – Operators precedence table and
- **Appendix E** – Library Functions.

This book is prepared for both learners as well as for experienced programmers. This book is very useful for Degree and Diploma students of Engineering, M.C.A., P.G.D.C.A., B.C.A., B.Sc., I.T.I., Commerce, Management and students learning Programming Languages in private Institutes.
ABOUT THE BOOK

This is an introductory book on FORTRAN 77. It explains clearly the fundamental concepts of various parts of the language. All the concepts presented in the book are clearly discussed in detail, and are treated with a good number of example programs. The fundamental ideas of good programming style are made clear, and the importance of correct flow of control in the design of a good program is lucidly described. Salient features of the book are:

* Emphasis on basic principles
* Simple, lucid and easy language
* Step-by-step treatment
* Carefully selected example programs
* Good number of exercises at the end of each chapter.

The book should prove to be extremely useful to undergraduate Science and Engineering students studying Computer Programming in FORTRAN 77 as a part of their Degree or Diploma requirements. The book should also be useful to students studying in short term courses.

CONTENT

1: INTRODUCTION
2: TYPES OF DATA
3: BASIC OPERATIONS ON DATA
4: FLOW OF CONTROL IN A PROGRAM
5: CONDITIONAL EXECUTION OF STATEMENTS
6: ITERATIVE EXECUTION OF STATEMENTS
7: FORMATTED INPUT AND OUTPUT
8: ARRAYS
9: SUBPROGRAMS
10: DATA STATEMENT AND SPECIFICATION STATEMENTS
11: FILE OPERATIONS
12: MISCELLANEOUS STATEMENTS
APPENDIX
APPENDIX A: BINARY REPRESENTATION OF DATA
APPENDIX B: INTRINSIC FUNCTIONS
APPENDIX C: FORMAT DESCRIPTORS
APPENDIX D: LIST OF FORTRAN STATEMENTS
APPENDIX E: SUBSET FORTRAN
APPENDIX F: FURTHER PROGRAMMING EXERCISES
INDEX
In this textbook the author has compiled the topics of Electricity, Magnetism and Materials as a one subject, which are the three foundation pillars of Electrical and Communication Engineering. These are presented with a little different method of approach to ensure the students to grasp the whole subject matter of the book easily.

The static electricity is the science of static charge including that of electric induction and the motional charge is an electric current. Magnetism in fact is an effect of electric current and electromagnetic induction is the interconsequence of varying electricity and magnetism. Since as per modern theory of atom, the electricity and magnetism have the origins in the matter itself. Therefore chapter of Electric Properties of Matter after Static Electricity and chapter of Magnetic Properties of Matter after Magnetism are introduced. These two chapters thus give introduction of conducting, insulating, semi-conducting and magnetic materials used in Electrical Engineering. Therefore, in the book before the chapters of materials, their related theories are given, and then chapters of materials are dealt. The chapter of Electric Current and Circuits being a link between electricity and magnetism is introduced as a fourth chapter. The chapter one of Introduction deals with the systems of units, which is a proper place for it. The book therefore presents a sound and comprehensive account of fundamental principles and their application orderly arranged.

The book now in its 14 Chapters contains:

* 143 Neatly drawn self-explanatory diagrams
* 42 Worked Examples
* 21 Useful Tables
* 237 Unsolved problems with answers at the end of each chapter
* 212 Objective Questions.

The book therefore covers adequately the most recent requirements of various important examinations. It is the fervent hope of the author that this book will satisfy the needs of the Engineering students preparing for the B.Tech/B.E. examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional examinations. It should also be of an immense help to the practising engineers.
The book provides all aspects and detailed study of Engineering Drawing — Plane and Solid Geometry, a core subject for all branches of Engineering study, presented in a lucid manner and easy-to-follow style. The text book follows the first-angle method of orthographic projection, however, the third-angle projection method has not been completely ignored. The entire book is printed in two colour which enhance the utility of the book.

In this Fifty-third Edition some errors are rectified. The earlier Fiftieth Edition of this text-book is thoroughly revised, extensively enlarged, completely updated. It has been one of the most comprehensive revisions since the book was first published. As a result, all the drawings have been redrawn with utmost intelligibility. Many new examples, drawings are incorporated along with some new text matter.

Chapter on Computer Aided Drafting (CADr) is entirely rewritten with inclusion of 50 self-interactive and self-learning practice modules.

This book accompanied by a computer CD as a novel pedagogical concept, containing 51 selected audiovisual animation modules presented for better visualization and understanding of the subject.

The solutions to exercises of Chapter 17, Isometric Projection and Chapter 20 Conversion of Views are given in this edition.

The topics of the subject are covered in 26 well-arranged chapters — therein it now contains:

* 1617 Self-explanatory and neatly drawn diagrams
* 523 Worked examples (Problems)
* 900 Exercises at the end of chapters
* 34 Useful tables

The book covers the syllabi in Engineering Drawing as a core subject for Degree Examinations of all the Indian Universities, Diploma Examinations conducted by various Boards of Technical Education, Certificate Courses, I.T.I. as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also prove of interest to the practising professionals.
This well-known text book gives complete knowledge on the subject of Machine Drawing, Mechanical Drafting and Production Drawing. It follows (i) the metric system of length measurement and (ii) first-angle method of orthographic projection. However, the third-angle projection method has not been completely ignored.

This Fiftieth Edition is thoroughly revised and extensively enlarged. Numerous new drawings and text matter have been incorporated to optimise the utility of the book. The chapter on Engine Parts are divided in two separate chapters such as

(1) Steam Engine Parts and
(2) Internal Combustion (I.C.) Engine Parts.

Chapter on Computer Aided Drafting (CAD) is entirely rewritten with 52 self-interactive and self-learning practice modules.

It describes in an easy-to-follow style and with application of the principles of orthographic projection, forms, proportions and uses of simple machine parts, engine parts and boiler parts.

The techniques of freehand sketching, dimensioning, conversion of pictorial views, sectional views and interpretation of views are treated in clear and simple manner. Most of the orthographic views are accompanied by the pictorial views of the objects to enable the students to visualize the shapes easily.

The book covers the syllabi of Machine Drawing to meet the requirements of students of Mechanical Engineering Degree Examinations of all the Indian Universities as well as Diploma examinations conducted by various Boards of Technical Education, Certificate Courses as well as for I.T.I. students and also to the candidates reading for the A.M.I.E., U.P.S.C., G.A.T.E. and similar competitive and professional examinations.
GEOMETRICAL AND MACHINE DRAWING
[IN FIRST-ANGLE PROJECTION METHOD]

N. D. BHATT, V. M. PANCHAL

ISBN : 9789380358895
Size : 170 mm × 240 mm
Binding : Paperback
Pages : 408 + 16 = 424

₹ 225.00

ABOUT THE BOOK

This text-book follows:
(i) the metric system of length measurement and
(ii) first-angle method of orthographic projection.

However, the third-angle projection method has not been completely ignored.

The topics of the subject matter are covered in 22 well-arranged chapters — therein it now contains:
* 914 Self-explanatory and neatly drawn diagrams
* 230 Worked examples (Problems)
* 500 Exercises at the end of chapters
* 36 Useful tables

It describes in an easy-to-follow style and with application of the principles of orthographic projection, forms, proportions and uses of simple machine, engine and boiler parts.

The techniques of freehand sketching, dimensioning, conversion of pictorial views and interpretation of views are treated in clear and simple manner. Most of the orthographic views are accompanied by the pictorial views of the objects to enable the students to visualize the shapes easily.

The book covers the syllabi in Engineering Drawing of the First Year of the three year Diploma courses in various branches of Engineering conducted by the Department of Technical Education, for I.T.I. students and also to the candidates reading for the A.M.I.E. and U.P.S.C. Examinations.

CONTENT

1 : DRAWING INSTRUMENTS AND THEIR USES
2 : SHEET LAYOUT AND SKETCHING
3 : LINES, LETTERING AND DIMENSIONING
4 : SCALES
5 : GEOMETRICAL CONSTRUCTION
6 : CURVES USED IN ENGINEERING PRACTICE
7 : LOCI OF POINTS
8 : PRINCIPLES OF PROJECTION
9 : ISOMETRIC PROJECTION
10 : OBLIQUE PROJECTION
11 : CONVERSION OF PICTORIAL VIEWS INTO ORTHOGRAPHIC VIEWS
12 : SECTIONAL VIEWS
13 : ORTHOGRAPHIC READING OR INTERPRETATION OF VIEWS
14 : SCREW THREADS
15 : SCREWED FASTENINGS
16 : KEYS, COTTER-JOINTS, PIN-JOINTS
17 : SHAFT COUPLINGS, CLUTCHES AN BRAKES
18 : PIPE JOINTS
19 : RIVETED JOINTS AND WELDED JOINTS
20 : SHAFT BEARINGS, BRACKETS AND HANGERS
21 : PULLEYS
22 : ASSEMBLY DRAWINGS
INDEX
ABOUT THE BOOK

This *text-book* aims at presenting the fundamental principles of Mechanical Engineering Design.

The fundamentals of theory and design are presented as lucidly as possible to enable the students in engineering institutions to get a clear grasp of the basic principles of the subject. It explains the general theory of mechanical engineering design and sets out problems for the students aimed at equipping them for design of machine parts with intelligence and understanding.

*Throughout this book* the chief aim has been to illustrate the subject matter fully with suitable diagrams and by direct treatment of the subject matter.

*The book contains* numerous examples carefully chosen from past examination papers of various Indian Universities.

*The book is intended for* Mechanical Engineering students preparing for degree examinations in engineering of almost all the Indian Universities, diploma examinations of various technical boards, certificate courses, examinations of A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional Examinations. It should also prove of interest and of practical value to practising engineers.

CONTENT

1 : MATERIALS OF CONSTRUCTION AND THEIR PROPERTIES
2 : DESIGN CONSIDERATIONS IN MACHINE PARTS
3 : CYLINDERS, TANKS AND PIPES
4 : RIVETED JOINTS
5 : BOLTS, NUTS AND SCREWS
6 : COTTER AND KNUCKLE JOINTS
7 : SHAFTS, KEYS AND COUPLINGS
8 : SPRINGS
9 : BEARINGS
10 : STRUTS AND COLUMNS
11 : POWER SCREWS
12 : LEVERS
13 : BRACKETS
14 : BELTS, PULLEYS AND CHAIN DRIVES
15 : FLYWHEELS
16 : GEARs
17 : WELDED CONNECTIONS
18 : DESIGN OF MISCELLANEOUS MACHINE PARTS
   – I : ENGINES AND BOILERS
   – II : BRAKES AND CLUTCHES
19 : DESIGN OF MISCELLANEOUS MACHINE PARTS
20 : DESIGN PROJECTS
APPENDIX : I TO APPENDIX : XVII
INDEX
ABOUT THE BOOK

This text-book explains the fundamentals of NC/CNC machine tools, operations and part programming which form essential portion of course on Computer Aided Manufacturing (CAM). This book also covers advanced topics such as Macro programming, DNC and Computer Aided Part Programming (CAPP) in detail.

In this second revised and enlarged edition, all the chapters are reviewed and relevant topics, examples, part programs, sketches, review questions and exercises have been added to enhance the utility of the book.

This book is divided into 6 major areas.

Chapter 1 to 4 cover the history, fundamentals and structure of NC/ CNC machine tools.

Chapter 5, 6 and 7 cover turning center programming in detail. Various turning canned cycles are discussed in depth with the help of illustrative examples.

Chapter 8 and 9 are devoted to machining center programming. Drilling canned cycles are discussed in detail with relevant examples.

Chapter 10 and 11 cover advanced topics of subprogramming and macro programming.

Chapter 12 deals with the communications and networking of NC/ CNC machine tools.

Chapter 13 and 14 explain the advanced programming using APT and CAD/CAM based programming respectively.

The book contains:
  * 258 Self explanatory and neatly drawn drawings
  * 62 Solved part programming examples
  * 37 Part programming exercises
  * 173 Review questions at the end of all the chapters
  * 101 Multiple choice questions.

It is the fervent hope of the authors that book will satisfy the needs of the Mechanical, Production, Mechatronics and Automobile Engineering students preparing for the B.Tech/B.E. examinations of all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate course as well as for the A.M.I.E., U.P.S.C., G.A.T.E., I.E.S. and other similar competitive and professional examinations. It should also be of an immense help to the practising Mechanical Engineers.
The text-book aims at presenting the topics of Product Design and Value Engineering in a simple manner. Each topic of the book has been arranged in such a way that reader is empowered with in-depth knowledge in the subject.

This is thoroughly revised and extensively enlarged edition. One new chapter on Product Design has been added. Some of the topics relevant to the subject have been added and few have also been described elaborately.

First six chapters contain topics on Product Design and Product Development. Product Design and Product development is a challenging task and can be learnt through experience. Many good universities have incorporated this course to introduce the challenges and difficulties in product development process, to the students. A product can be developed at lowest possible cost if the process is planned systematically. Initial few chapters of the book cover systematic procedure for “Product Development” in detail, supported with relevant examples.

Subsequent five chapters of the book cover the Value Engineering concept. Value Engineering approach is used to eliminate the unnecessary cost from the product. The implementation of Value Engineering concept has been elaborately described as value engineering job plan along with value engineering project selection, FAST diagram and Life Cycle Cost with relevant case studies.

Last chapter deals with practical aspects of manufacturing, affecting the design considerations.

The salient features of this book are:

* Lucid description of Product Development process and Value Engineering Concept.
* Illustrative examples within the text.
* Comprehensive summary at the end of each chapter.
* Exercise at the end of each chapter.
* Solved sample papers (GTU).
* Case studies of various products to illustrate product development process.
* Value Engineering Training programme course.
* Illustrative engineering drawings to understand design for manufacture.

The book covers major syllabus of the subject Product Design and Value Engineering (Subject code 171904 for B.E. Semester VII of Mechanical Engineering branch)prescribed by Gujarat Technical University (GTU) and other Indian Universities. The book will also be of immense help to the practicing engineers.
ABOUT THE BOOK

This text-book provides an in-depth background in the field of Fluid Power. It covers Design, Analysis, Operation and Maintenance. The reader will find this book useful for a clear understanding of the subject and also to assist in the selection and troubleshooting of fluid power components and systems used in manufacturing operations, providing a systematic summary of the fundamentals of hydraulic power transmission.

This book discusses the main characteristics of hydraulic drives and their most important types in a manner comprehensible even to newcomers of the subject.

This book covers a broad range of topics in the field, including: physical properties of hydraulic fluids; energy and power in hydraulic systems; frictional losses in hydraulic pipelines; hydraulic pumps, cylinders, cushioning devices, motors, valves, circuit design, conductors and fittings; hydraulic system maintenance; pneumatic air preparation and its components; and electrical controls for fluid power systems. It provides everything you need to understand the fundamental operating principles as well as the latest maintenance, repair and reconditioning techniques for industrial oil hydraulic systems.

Better understanding of the material is promoted by the sample solutions to various mathematical problems given in each chapter. A number of photographs and illustration have been attached to reflect current “Fluid Power system”.

The book in its 15 Chapters and 3 Appendices contain:

* 431 Neatly drawn self-explanatory diagrams
* 54 Useful Tables
* 52 Worked examples
* 285 Questions are given for preparation of examinations

It is hoped that this book will satisfy the need of the Mechanical Engineering students preparing for the B.Tech/B.E. examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations. It should also be of an immense help to the practising Engineers.

The entire subject matter is presented in simple and lucid language. Number of figures, graphs, tables and solved examples are contributed along with the text matter to understand the subject matter easily.

The book contains 12 Chapters and Appendix:
* 187 Neatly drawn self-explanatory diagrams
* 77 Useful Tables giving technical data
* 28 Solved Examples
* 159 Questions and Exercises are given at the end of chapters.

It is the fervent hope of the author that this book will satisfy the needs of the Mechanical, Production, Automobile Engineering students preparing for the B.Tech/B.E. examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations. It should also be of an immense help to the practising Mechanical Engineers.
This text-book along with its companion volume II is designed to cover the entire syllabi of the subject of Thermal Engineering, which is inherent in the study of engineering students. The entire matter of the book is most comprehensive and presented in lucid language, with number of solved examples, neatly drawn sketches, so that the reader can understand the fundamentals of the subject easily. Number of exercises are given at end of appropriate sections as well as at the end of chapters. Exercises, subjective questions, objective type multiple choice questions are also included at the end of chapters.

The book has Sixteen chapters. The key feature of the book are:

Chapter 1 and 2 deals with Applied Thermodynamics
Chapter 3 deals with Steam and Steam Cycles
Chapter 4 to 6 contains Boilers
Chapter 7 and 8 deals with Fuel and Draught
Chapter 9 consist of the study of Steam Engine and Testing
Chapter 10 and 11 deals with Steam Nozzle and Turbine
Chapter 12 discussing topic on Condenser
Chapter 13 and 14 contains topics on I. C. Engines Theory and Testing
Chapter 15 Gas Turbine
Chapter 16 Air Pollution and Control.

The book within its 928 pages it comprise the following

* 546 Self-illustrative neatly drawn sketches
* 43 Useful tables
* 293 Solved Examples
* 500 Objective Type Multiple Choice Questions
* 905 Exercises and Subjective Questions

It is hoped that this book will satisfy the need of the Mechanical Engineering students preparing for the B.Tech/B.E. examinations of almost all the Indian Universities, Diploma examinations conducted by various Boards of Technical Education, Certificate courses as well as for the A.M.I.E., U.P.S.C., G.A.T.E. and other similar competitive and professional Examinations. It should also be of an immense help to the practising Engineers.
LOGARITHMS AND OTHER TABLES
[ABRIDGED FROM LOGARITHMS, STEAM AND OTHER TABLES]

DR. N. C. PANDYA
DR. C. S. SHAH

ISBN : 9789380358369
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Binding : Paperback
Pages : 48

CONTENT
1 : PREFIXES USED WITH UNITS
2 : LIST OF SYMBOLS AND GREEK ALPHABETS
3 : LOGARITHMS
4 : ANTILOGARITHMS
5 : NATURAL SINES
6 : NATURAL COSINES
7 : NATURAL TANGENTS
8 : LOGARITHMIC SINES
9 : LOGARITHMIC COSINES
10 : LOGARITHMIC TANGENTS
11 : NATURAL LOGARITHMS
12 : BESSEL’S FUNCTIONS (CYLINDRICAL FUNCTIONS)
13 : IMPORTANT FORMULA FOR BESSEL’S FUNCTIONS
14 : VALUES OF GAMMA FUNCTIONS AND LEGENDRE’S POLYNOMIALS
15 : HYPERBOLIC FUNCTIONS (TABLES)
16 : DEGREES TO RADIANS
17 : MINUTES TO RADIANS
18 : SECONDS TO RADIANS
19 : DECIMAL EQUIVALENTS OF COMMON FRACTIONS
20 : BINOMIAL COEFFICIENTS
21 : AREA OF THE CIRCLE WHEN DIAMETER IS GIVEN
22 : CIRCUMFERENCE OF THE CIRCLE WHEN DIAMETER IS GIVEN
23 : RECIPROCAL VALUES
24 : SQUARES, CUBES, SQUARE ROOTS AND CUBE ROOTS

STEAM TABLES
[ENTIRELY IN SI UNITS]
[INCLUDING MOLLIER CHARTS]

DR. N. C. PANDYA

ISBN : 9789380358048
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Binding : Paperback
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CONTENT
1 : PROPERTIES OF SATURATED STEAM AND SATURATED WATER (TEMPERATURE BASE)
2 : PROPERTIES OF SATURATED STEAM AND SATURATED WATER (PRESSURE BASE)
3 : PROPERTIES OF SUPERHEATED STEAM
4 : PROPERTIES OF SATURATED MERCURY VAPOUR
5 : MOLLIER DIAGRAM ENTHALPY-ENTROPY CHART FOR STEAM IN SI UNITS.