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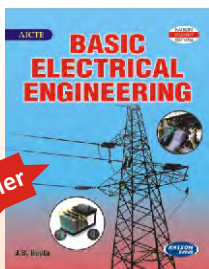
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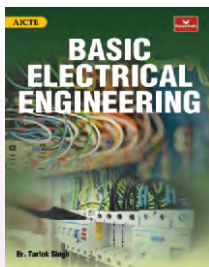
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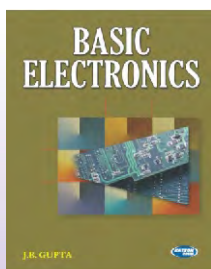
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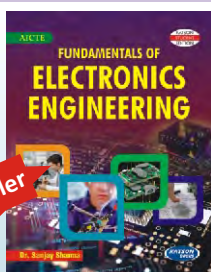
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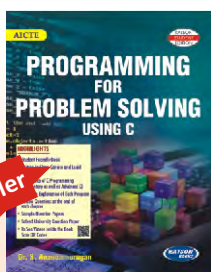
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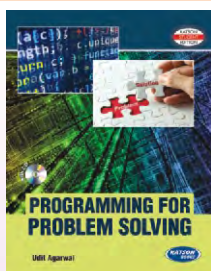
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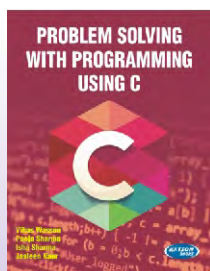
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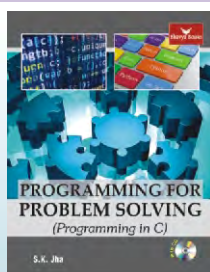
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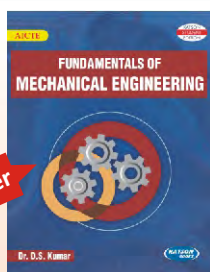
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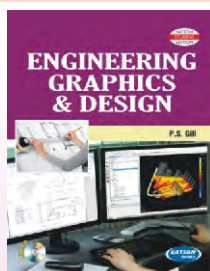
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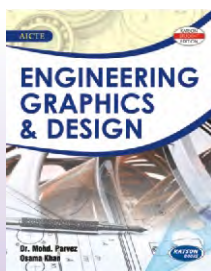
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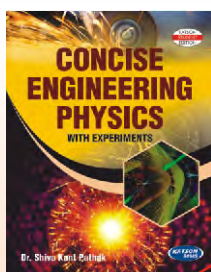
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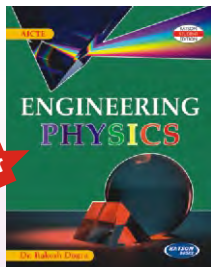
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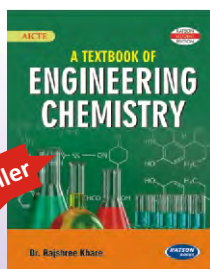
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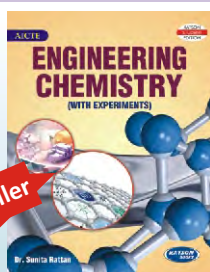
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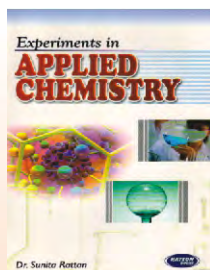
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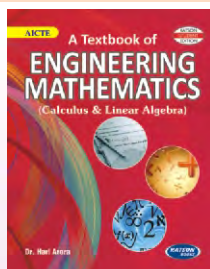
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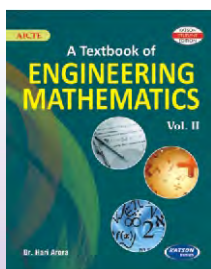
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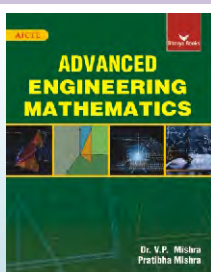
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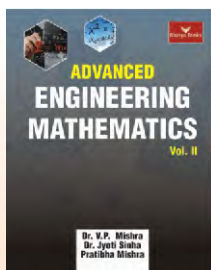
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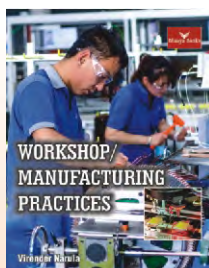
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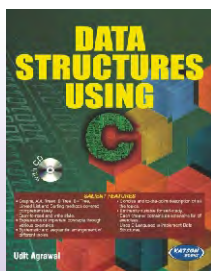
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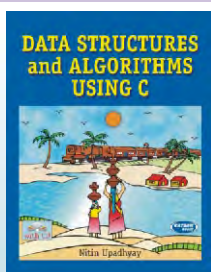
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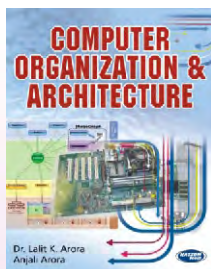
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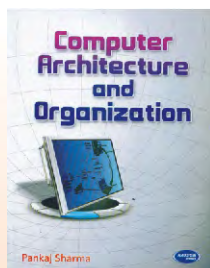
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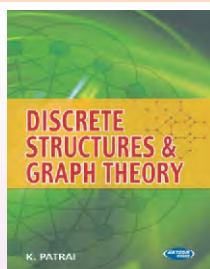
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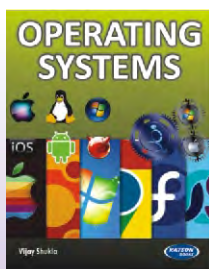
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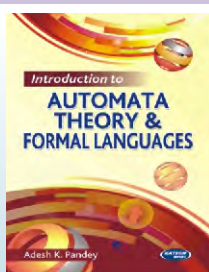
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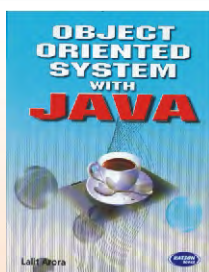
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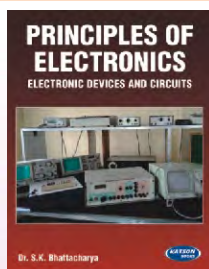
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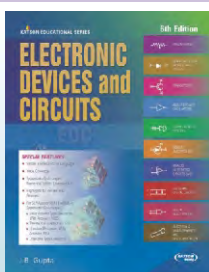
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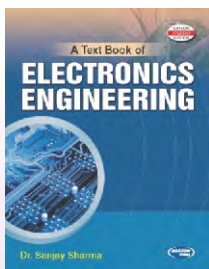
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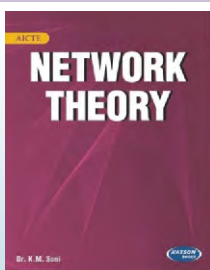
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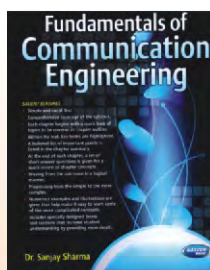
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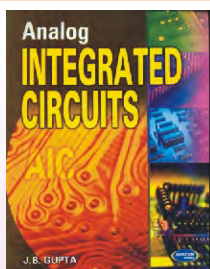
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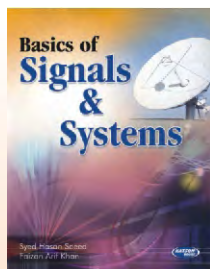
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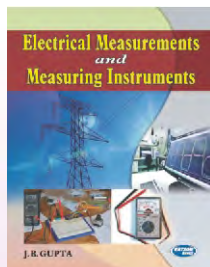
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## THIRD AND FOURTH SEMESTER

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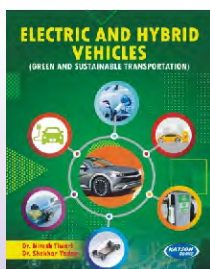
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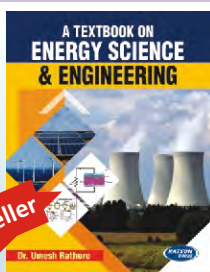
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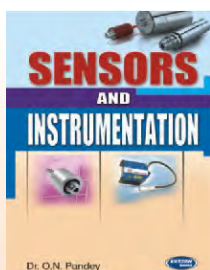
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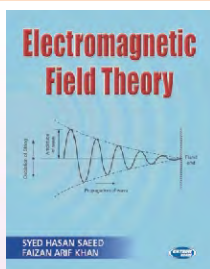
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• Vectors • Electrostatics • Electric Field in Materials • Magnetostatics & Magnetic Field in Materials • Electromagnetic Waves • Transmission Lines • Objective Type Questions • Previous Year Question Papers • Index.

## THIRD AND FOURTH SEMESTER

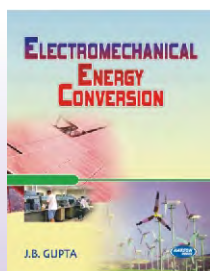
## SECOND YEAR

### ELECTROMECHANICAL ENERGY CONVERSION-I

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ISBN: 978-93-5014-012-3  
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By  
**J.B. Gupta**

### CONTENTS

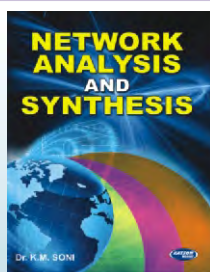
**Unit-I: Principles of Electromechanical Energy Conversion**  
• Magnetic Circuits and Induction • Principles of Electromechanical Energy Conversion • Basic Concepts of Rotating Electrical Machines  
**Unit-II: DC Machines**  
• Construction of DC Machines • Armature Reaction and Commutation in DC Machines • Operating Characteristics and Applications of DC Generators  
**Unit-III: DC Machines (Continued)**  
• Operating Characteristics and Applications of DC Motors  
• Speed Control, Starting and Testing of DC Machines  
**Unit-IV: Single Phase Transformer**  
• Single Phase Transformers  
**Unit-V: Three Phase Transformers**

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Price: ₹ 595/-  
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By  
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### CONTENTS

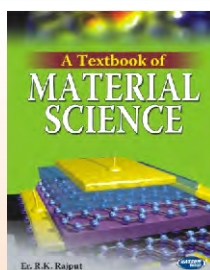
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• Transient Circuit Analysis • Network Theorems • Two Port Networks  
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Reprint: 2024



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**Er. R.K. Rajput**

### CONTENTS

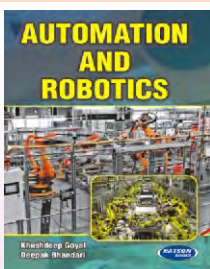
**Unit-I** • Introduction: Perspective and Importance of Engineering Materials • Atomic Models Periodic Table and Chemical Bonding  
• Crystallography • Imperfections (Defects) in Solids.  
**Unit-II** • Mechanical Properties and Testing • Microstructural Examination-Identification of Metals and Alloys • Phase Diagram and Equilibrium Diagram.  
**Unit-III** • Ferrous Metals and Alloys • Heat Treatment • Non-Ferrous Metals and Alloys.  
**Unit-IV** • Magnetic Properties • Electric Properties • Diffusion in Solids.  
**Unit-V** • Ceramics • Polymers/Plastics and Composite Materials  
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*As per New Syllabus*

## SECOND YEAR

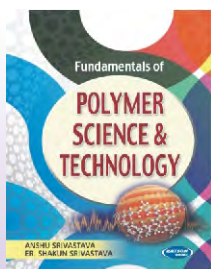
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**Er. Shakun Srivastava**

### CONTENTS

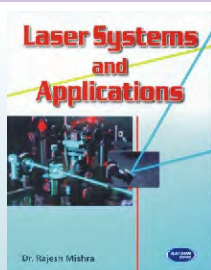
- Introduction, Nomenclature and Classification • Kinetics of Polymerization • Polymer Characterization and Analysis • Chemical and Geometrical Structure of Polymer Molecules and Composites • Organic Polymers • High Performance Polymers • Polymer Processing of High Performance Polymers • Molecular Weight of Polymers • Glass Transition Temperature and Crystallinity of Polymers • Chemistry of Polymerization • Co-ordination and Co-polymerization • Thermo-plastics and Thermosets or Thermosetting Resin • Elastomers or Rubbers and Silicon Polymers • Natural Polymers • Application of Polymers • Appendices • References • Question Papers • Index.

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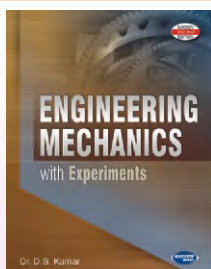
- Basic Concepts • Co-Planar Forces • Moment of Force and Parallel Forces • Concurrent Forces in Space • Plane Trusses and Frames • Cables and Strings • Centre Points: Centroid and Centre of Gravity • Moment of Inertia: Area and Mass • Friction • Lifting Machines • Shear Force and Bending Moment • Virtual Work  
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By  
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- Basic Concepts • Co-Planar Forces • Moment of Force and Parallel Forces • Friction • Shear Force and Bending Moment • Plane Trusses and Frames • Centroid and Centre of Gravity • Moment of Inertia: Area and Mass • Rectilinear Motion • Rotation and General Plane Motion • Kinetics: Impulse, Momentum, Work and Energy • Kinetics of Rotary Motion • Simple Stresses and Strains • Bending Stresses in Beams • Torsion of Circular Shafts • Appendices • Experiments • Objective Type Questions • Previous Year Question Paper • Index.



## THIRD AND FOURTH SEMESTER

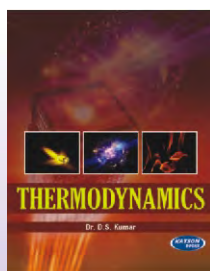
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By  
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### CONTENTS

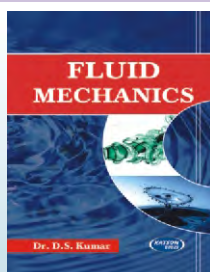
- Basic Concepts & Definitions • Temperature and Zeroth Law of Thermodynamics • Transient Energies: Work and Head • Ideal Gases and their Basic Laws • First Law of Thermodynamics • Steady Flow Energy Equation (Flow Processes and 1st Law) • Second Law of Thermodynamics • Entropy • Availability and Irreversibility • Mixture of Gases • Steam and its Properties • Thermodynamic Vapour Cycles • Thermodynamic Relations • Refrigeration Systems and Psychrometry • Previous Year Question Papers • Index.

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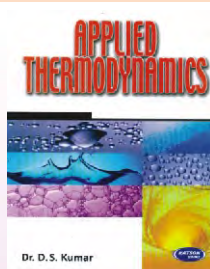
- Introduction to Manufacturing Processes • Industrial Safety • Properties of Engineering Materials • Ferrous Metals • Metal Casting Processes (Foundry) • Special Casting Processes (Contemporary) • Hot Working Processes • Cold Working Processes (Sheet Metal Operations) • Bench Work and Fitting • Welding (Metal Joining Process) • Metal Cutting Processes • Plant Layout • Appendices • Previous Years Examination Papers • Index.

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## SECOND YEAR

## THIRD AND FOURTH SEMESTER

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(For Civil Branch)

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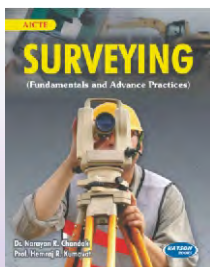
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Instruments • Triangulation • Triangulation Adjustment  
• Photogrammetry • Hydrographic Survey • Remote Sensing  
• Special Survey • Computation of Area and Volume  
• Appendix • Experiments • Index.

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(For Civil Branch)

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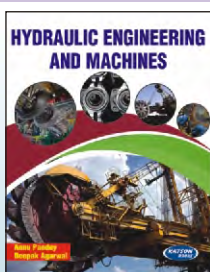
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Machines) • Rotodynamic Machines • Experiments • Examination  
Paper • References • Index .

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(For Civil Branch)

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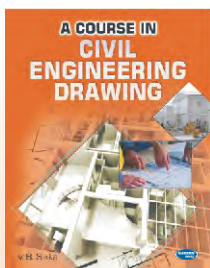
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• Floors (Ground and Upper Floors) • Forms of Arches, Centering  
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Structures • R.C.C. Structures • Stairs and Staircases • Isometric  
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• Public Health Engineering

#### Part-III: Irrigation

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• Index.

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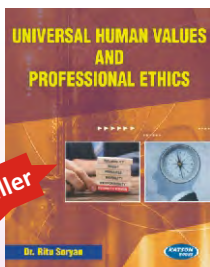
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'Body' • Understanding the need of self (I) and body-Sukh and Suvridha • Understanding  
the Body as an Instrument of Self (I) • Understanding the Characteristics and Activities  
of 'I' and Harmony in 'I' • Understanding the Harmony of 'I' with Body

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• Understanding Harmony in Family Relations • Values in Human-Human Relations  
• Understanding Harmony in the Society • Vision of Universal Harmonious Society

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• Understanding Harmony in Nature • Interconnectedness and Mutual Fulfilment in  
Nature • Understanding Existence as Co-existence and Harmony at all Levels of  
Existence

#### Part—5: Implementation of Holistic Harmony on Professional Ethics

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Human Order  
• Index.

**Best Seller**

## THIRD AND FOURTH SEMESTER

## SECOND YEAR

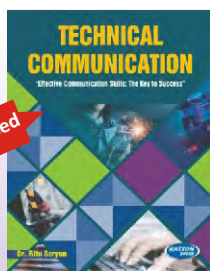
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- Digital Communication and Personality Making
- Index.

As per New Syllabus

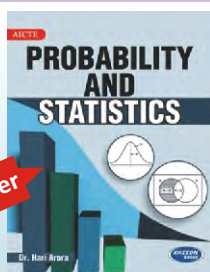
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### CONTENTS

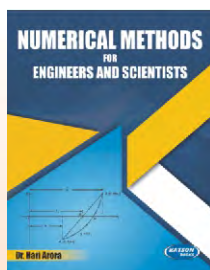
- Basic Probability • Continuous Probability Distribution
- Bivariate Distribution • Basic Statistics • Curve Fitting • Applied Statistics
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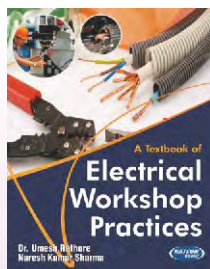
### CONTENTS

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- Solution of Algebraic and Transcendental Equations • Matrix and Determinants • Matrix Inversion and Eigen Value Problem
- Curve Fitting • Calculus of Finite Differences • Interpolation with Equal and Unequal Intervals • Numerical Differentiation and Integration
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- Index.

## SECOND YEAR

## THIRD AND FOURTH SEMESTER

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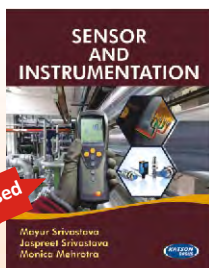
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## THIRD YEAR

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- Serializability and Deadlock Handling • Concurrency Control Techniques • Competitive Quiz • A Practical Approach to SQL
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Reprint: 2024



By  
**Adesh K. Pandey**

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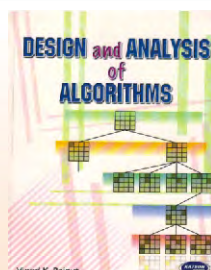
- Introduction to Compiler • Introduction to Finite Automata and Regular Expression • Lexical Analysis • The Syntactic and Semantic Specification of Languages • Top-Down Parsing
- Bottom-up-Parsing • Syntax-Directed Translation • Storage Management • Symbol Table Management • Intermediate Code Generation • Error Detection and Recovery • Code Optimization and Generation • Appendix • Previous Year Examination Papers • Index.

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By  
**Vinod K. Rajput**

### CONTENTS

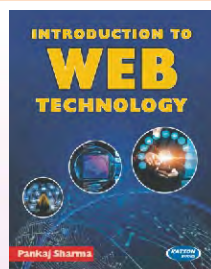
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- Augmenting Data Structures • Dynamic Programming • Greedy Algorithms • Amortized Analysis • B-tree • Binomial Heaps
- Fibonacci Heaps • Data Structures for Disjoint Sets • Backtracking • Branch and Bound • Elementary Graph Algorithms • Minimum Spanning Tree • Single Source Shortest Paths • All Pairs Shortest Paths • Maximum Flow • Sorting Networks • Matrix Operations • Polynomials and the FFT
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- JAVA Beans • Servlet • JDBC (Java Database Connectivity)
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# FIFTH AND SIXTH SEMESTER

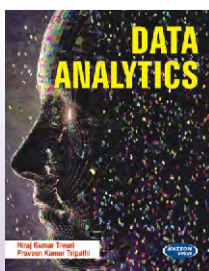
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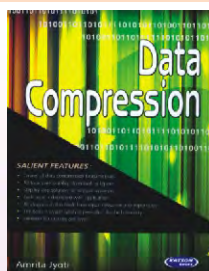
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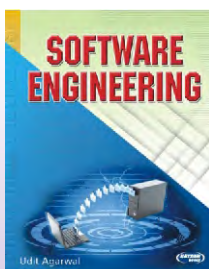
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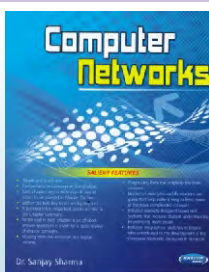
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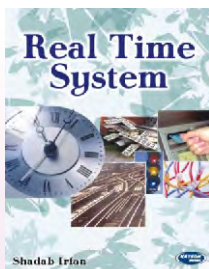
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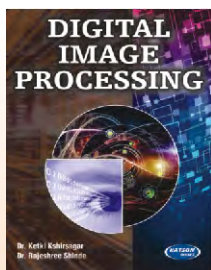
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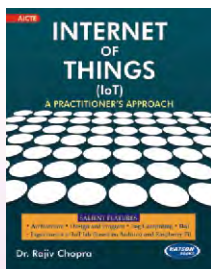
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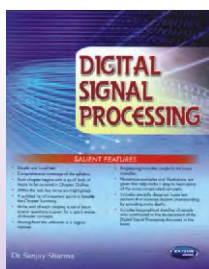
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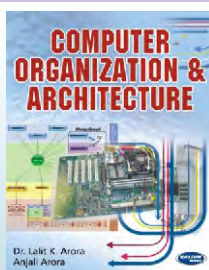
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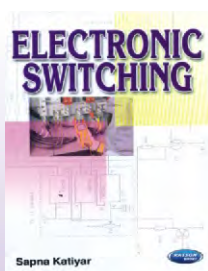
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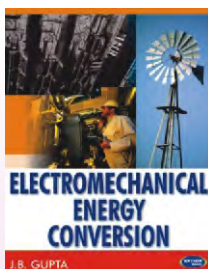
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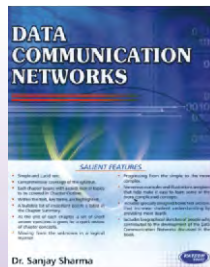
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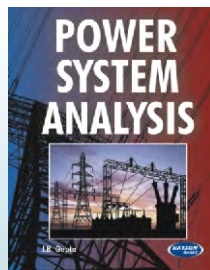
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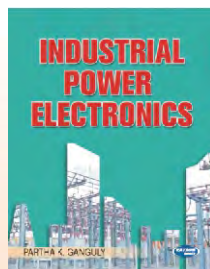
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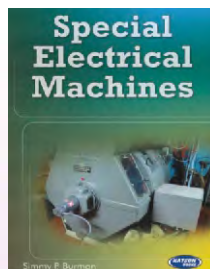
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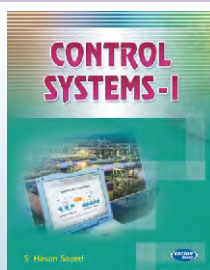
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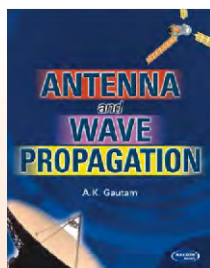
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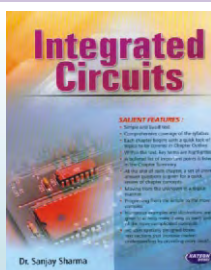
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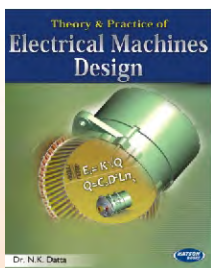
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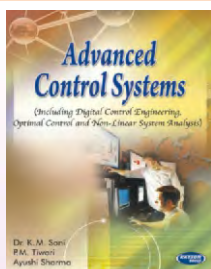
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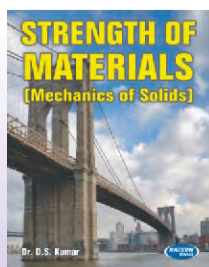
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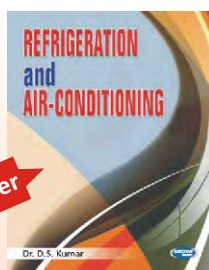
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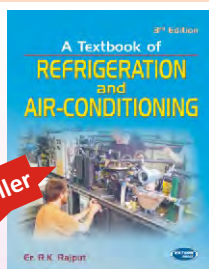
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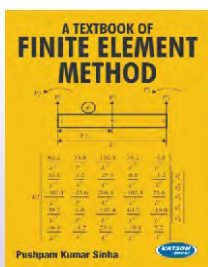
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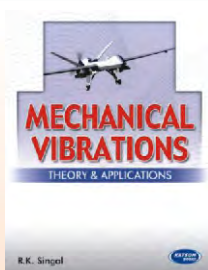
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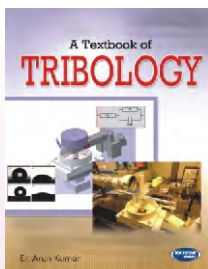
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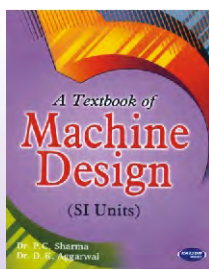
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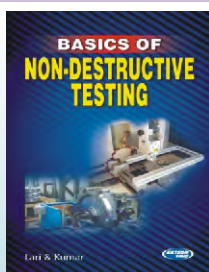
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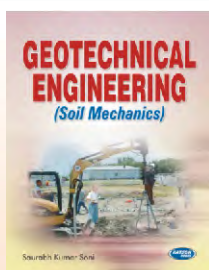
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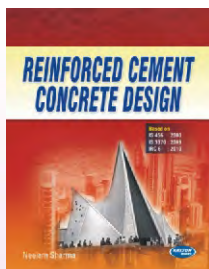
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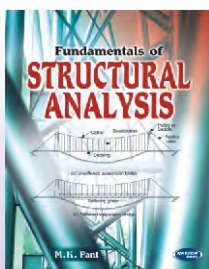
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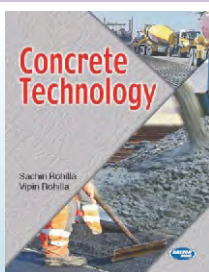
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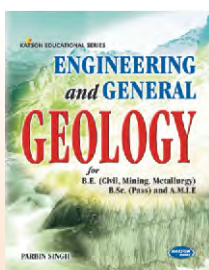
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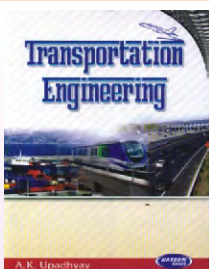
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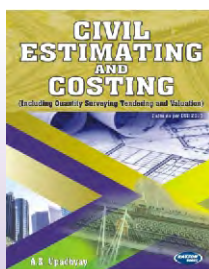
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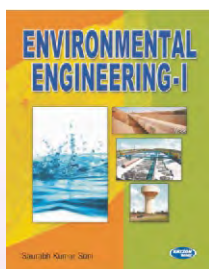
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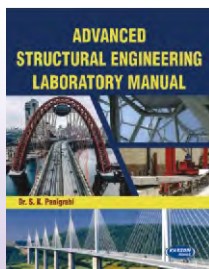
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**B: Characterization of Aggregate** • Particle size distribution of fine and coarse aggregates • Specific gravity and Water absorption test of fine aggregates • Specific gravity and Water absorption test of coarse aggregates • Unit weight and Void test of fine and coarse aggregates • Aggregate Crushing value test of coarse aggregate • Aggregate Impact value test of coarse aggregate • Aggregate Abrasion value of coarse aggregate • Flakiness index and Elongation index test of coarse aggregate • Bulking test of fine aggregates • Shape and Dimension test for brick

**C: Characterization of Brick** • Water absorption test of brick • Compressive strength test of brick

**D: Characterization of Concrete** • Slump test and Compaction factor test of wet concrete • Stress-strain curve, modulus of elasticity, and Poisson's ratio test of concrete • Flexural strength/Modulus of Rupture test of concrete • Split tensile strength test of concrete

**E: Characterization of Self-Compacting Concrete (SCC)** • Slump Flow Test of SSC • T<sub>50</sub> CM Slump Flow Test of SSC • V Funnel Test of SSC • V Funnel at T5 Minutes of SSC • L Box Test of SSC • J Ring Test of SSC.

#### Part 2 Study of Durability Properties for Concrete

• Water Absorption test of concrete • Sorptivity test of concrete • Rapid Chloride Permeability test of concrete (RCPT) • Acid Resistance test of concrete • Sulphate Resistance test of concrete • Chloride Resistance test of concrete

#### Part 3 Study of Microstructural Properties

• Scanning Electron Microscope (SEM) test • Energy Dispersive X-Ray Spectroscopy (EDX) test • X-Ray Diffraction (XRD) test • Fourier Transform Infrared Spectroscopy (FTIR) test • Thermogravimetric Analysis (TGA) test

#### Part 4 Structural Engineering Laboratory

**A: Characterization of Steel** • To determine the unit mass (kg/m) and the effective cross-sectional area of the given HYSD bar • To check the transverse cracks in the bent position after bend and rebound test of HYSD bars • Determination of ultimate tensile strength by UTM and percentage elongation of given HYSD bar • To determine the ultimate tensile strength, yield strength, and percentage elongation of a mild steel coupon

**B: Non Destructive Testing** • To determine the quality of concrete using non-destructive testing of concrete by Ultrasonic Pulse Velocity method • To assess the available compressive strength in concrete using non-destructive testing by the Rebound Hammer method

**C: Mix Design of Concrete** • To perform the M25 concrete mix design following IS 10262:2019 • To test an RCC beam under two-point load under flexure

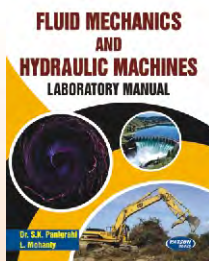
**D: Some Regular Structural Analysis Problems** • (a) To compare the experimental and theoretical values of the horizontal thrust of a three-hinged parabolic arch. • To plot the Influence Line Diagram of the horizontal thrust of the three-hinged arch • (a) To draw the profile of the two hinged arch (b) To compare the horizontal thrust for a given system of loading at the roller end both experimentally and analytically in a two-hinged arch. • To verify Maxwell theorem of reciprocal deflection by needle beam apparatus and to measure flexural rigidity

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#### OPEN CHANNEL FLOW

• Manning's Constant and Chezy's Constants • Flow Over Notches • Characteristics of Flow over Sharp Crested Weir • Specific Energy and Critical Depth • Application of Specific Energy (Flow Characteristics Over the Hump) • Application of Specific Energy (Flow Characteristics with Width Constriction) • Hydraulic Jump • Surges • Boundary Layer Growth in Open Channel • Velocity Distribution in an Open Channel • Flow Beneath a Sluice Gate • Flow Through a Parshall Flume • Flow over a Broad Crested Weir • Flow through a Cut-throat Flume • Characteristics of Flow over Gravel Bed

#### HYDRAULIC MACHINES HYDRAULIC RAM

• Study of Characteristic Curves of a Hydraulic Ram at Constant Valve Lift and Constant Supply Head • Determination of Rankine Efficiency of Hydraulic Ram and D'Aubusson's Efficiency

#### WATER JET

• Determination of Force Exerted by a Jet of Water on a Fixed Vane

#### TURBINES

• Determination of Overall Efficiency of Francis Turbine with Constant Speed • Determination of Overall Efficiency of Pelton Turbine under Constant Speed with Alternating Load • Study of Performance Characteristics of a Kaplan Turbine at a Constant Speed

#### PUMPS

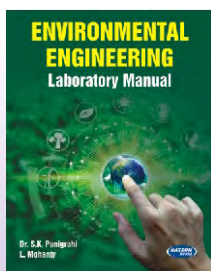
• Study of Performance Characteristics of a Centrifugal Pump at a Constant Speed • Study of Performance Characteristics of a Reciprocating Pump at a Constant Speed • Determination of Percentage of Slip and Efficiency of the Double-acting Reciprocating • Pump and Drawing its Characteristic Curve • Study of Performance Characteristics of a Gear Pump at a Constant Speed

• References

## FIFTH AND SIXTH SEMESTER

## THIRD YEAR

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**L. Mohanty**

#### CONTENTS

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##### Physical Water Quality Parameters

• Color • Taste • Odour • Electrical Conductivity • pH (Potential Hydrogen) • Turbidity • Solids

##### Inorganic/Chemical Water Quality

• Total Hardness • Sodium (NA), Calcium (CA), Potassium (K) Content • Chloride • Residual Chlorine • Available Chlorine in Bleaching Powder • Sulfate (SO<sub>4</sub>) Ion • Sulfide • Fluoride • Alkalinity • Acidity • Nitrate • Nitrogen • Phosphorous • Aluminium • Anionic Detergent (As MBAS) • Barium • Boron • Magnesium • Selenium • Silver

##### Toxic Metals

• Copper • Chromium • Cadmium • Zinc • Lead • Mercury • Iron • Manganese • Cyanide • Molybdenum • Nickel • Polychlorinated

Biphenyl (PCB) • Polynuclear Aromatic Hydrocarbons (PAH) • Total Arsenic • Trihalomethanes (THMS)

##### Organic, Nutrient and Demand

• Dissolved Oxygen (DO) • Biochemical Oxygen Demand (BOD) • Chemical Oxygen Demand (COD) • Phenol • Oil and Grease (OG) • Pesticides

##### Bacteriological Water Quality Parameters

• Total and Faecal Coli Form • Most Probable Number (MPN) Test

##### Radioactive Elements

• Alpha Emitter • Beta Emitter

##### Part 2 Wastewater Treatment

• Sludge Volume Index (SVI)

##### Part 3 Solid Waste Characterization

##### Solid Waste

• Municipal Solid Waste Characterizations

##### Part 4 Air Quality Monitoring

##### Air Quality Test

• Respirable Particulate Matter (Demonstration) • Gases and Particulates in Ambient Air • Indoor Air Quality • Spm and Rspm in Ambient Air • Exhaust Gas Analysis for Air Pollutants

##### Part 5 Noise Level Determination

##### Noise Pollution

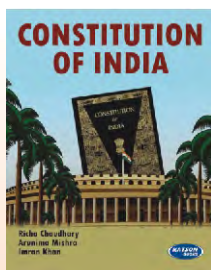
• Sound Determination by Sound Level Meter (Demonstration)

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**Module-IV: Intellectual Property Laws and Regulation to Information** • Introduction to Intellectual Property Rights & Regulation to Information

##### Module-V: Business Organizations and E-Governance

• Business Organizations and E-Governance

• Model Question Papers

• Previous Year Question Papers

• Bibliography

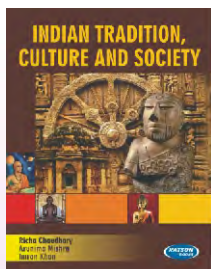
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## THIRD YEAR

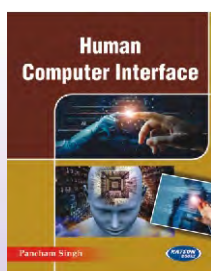
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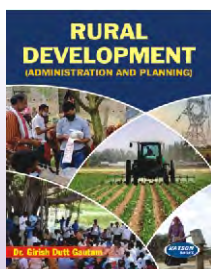
# SEVENTH AND EIGHTH SEMESTER FOURTH YEAR

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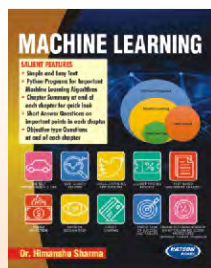
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- Project Management
- Project Financing
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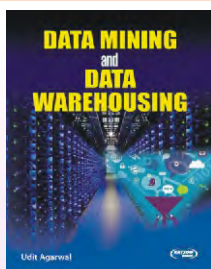
- Basic Concepts in Machine Learning
- Supervised Learning
- Unsupervised Learning
- Concept Learning
- Decision Tree Learning
- Artificial Neural Networks (ANN)
- Genetic Algorithms (GA)
- Reinforcement Learning
- Bayesian Decision Theory and Bayesian Learning
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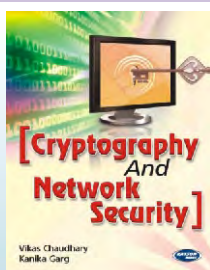
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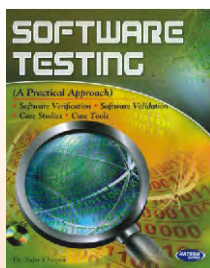
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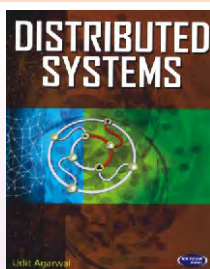
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- Unit-III:**  
• Data Managements in Mobile Computing.
- Unit-IV:**  
• Data and Transaction Management in a Mobile Environment • Mobile Agent Computing.
- Unit-V:**  
• Routing Protocols for Adhoc Wireless Networks • Model Question Paper based on Previous Examination Paper • Examination Papers (Solved) • Examination Papers (Unsolved) • Index.

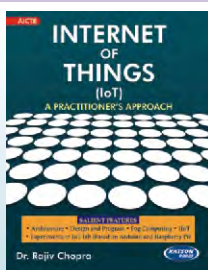
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- Introduction to IoT
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- IIoT — Industrial to IoT
- Fog Computing
- Appendix
- Index.

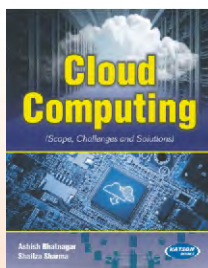
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## CONTENTS

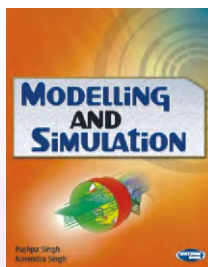
- Introduction • Cloud Types and Services • The Role of Networks in Cloud Computing • Virtualization Technology • Enterprise Knowledge Clouds • Cloud Security Mechanism • Migrating IT to the Cloud • Transformation on Clouds • Cloud Architectural Blueprints • A Solution for Enterprise Cloud Problems • Understanding Microsoft Azure • Azure Web Apps and Services • Azure Database • Amazon Webservices—An Overview • AWS—The Practical Aspects • Index.

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• Equalization and Diversity Techniques • Speech Coding and Multiple Access Techniques.

### Unit-III

• Cellular Concepts

### Unit-IV

• Wireless Networks • Wireless Systems and Standards.

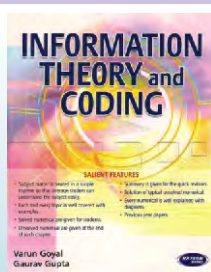
**Unit-V** • Some Emerging Wireless Network Technologies • An Overview of CDMA2000, WCDMA and EDGE • Wireless Architectures • Appendices • Model Question Paper • Index.

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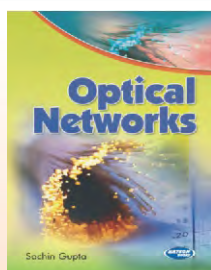
• Probability and Random Variable • Random Processes  
• Information Theory and Source Coding • Linear Block Codes  
• Convolutional Codes and ARQ • Appendix • References  
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## OPTICAL NETWORKS

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**Unit 0:** Optical Networks.

• Introduction

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### Unit II:

• Optical Components

### Unit III:

• Sonet/SDH Networks • ATM • WDM Network Elements

### Unit IV:

• WDM Network Design Issues & Introduction to Access Networks

### Unit V:

• Optical Switching and Deployment Considerations

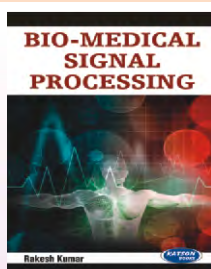
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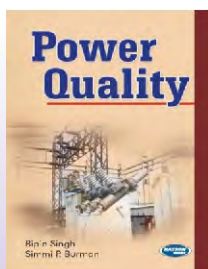
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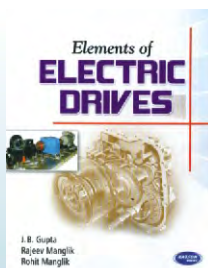
• Introduction to Power Quality • Voltage Sag • Electrical Transients • Harmonics • Measurement and Solution of Power Quality Problems • Distributed Generation and Benchmarking of Power Quality • Harmonic Distortion Evaluations • References • Examination Papers • Index.

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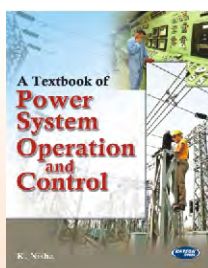
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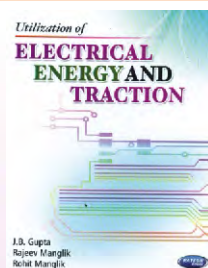
• Introduction to Power System • Load Curves • Load Flow Algorithms • Optimal Load Flow • Power Generation • Stability • Load Frequency Control • Automatic Voltage Controller (AVC) • Control of Voltage and Reactive Power • Flexible AC Transmission Systems (FACTS) • High Voltage Direct Current • Supervisory Control and Data Acquisition (SCADA) • Appendix • Bibliography • Model Question Papers • Examination Paper • Index.

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**Unit-I: Electric Heating**  
• Electric Heating.  
**Unit-II: Electric Welding and Electrolytic Processes**  
• Electric Welding • Electrolytic Processes.  
**Unit-III: Illumination and Refrigeration and Air Conditioning**  
• Illumination • Refrigeration and Air-Conditioning.  
**Unit-IV: Electric Traction-I**  
• Traction Systems • Train Movement and Energy Consumption.  
**Unit-V: Electric Traction-II**  
• Electric Traction Motors • Control of Traction Motors • Braking: Mechanical Considerations and Control Equipment • Power Supply for Electric Traction • Systems of Electric Traction • Examination Papers • Index.

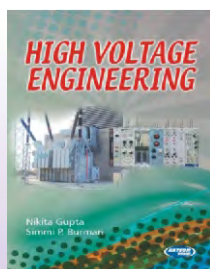
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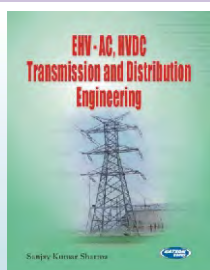
- Introduction • Estimation of Electric Stress and Control
- Breakdown in Gases and Dielectrics • Generation of High Voltages and Currents • Measurement of High Direct Current Voltages and Current • Lighting Phenomenon and Travelling Waves • Non-Destructive Testing and High Voltage Testing
- Corona Discharge • References • Model Test Papers
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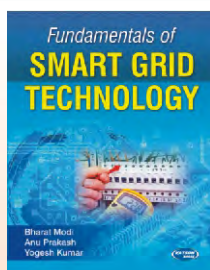
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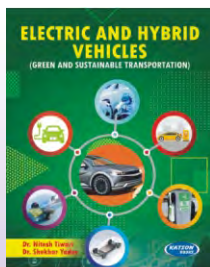
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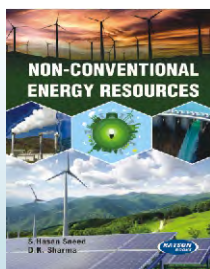
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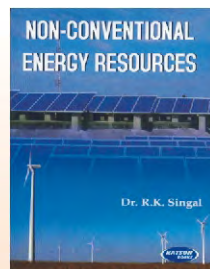
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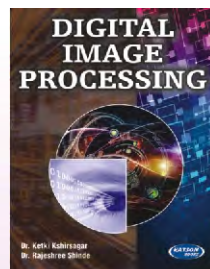
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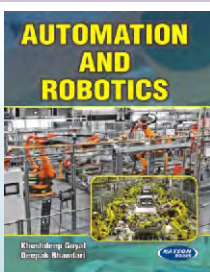
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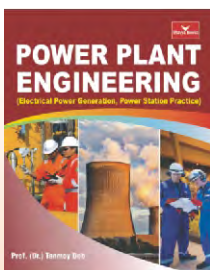
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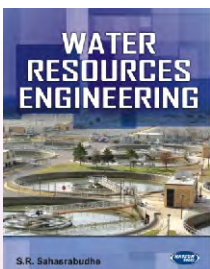
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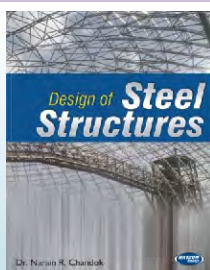
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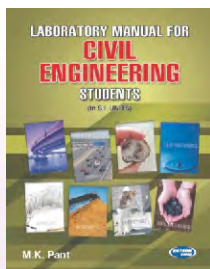
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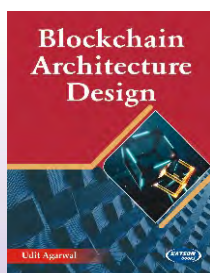
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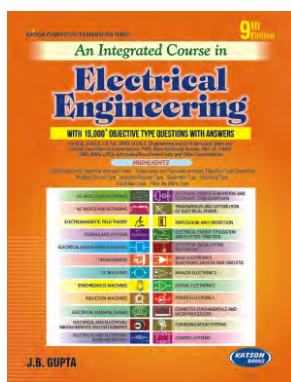


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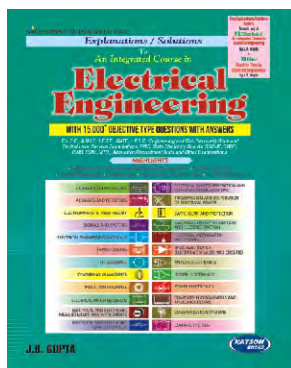
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