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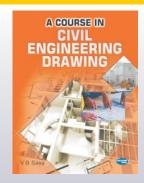
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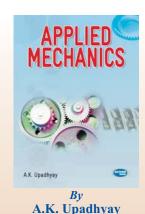
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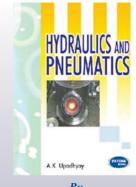
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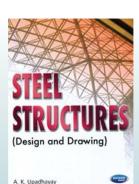
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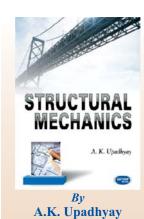
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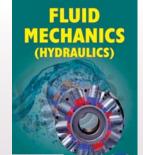
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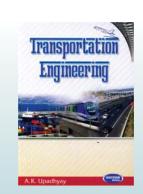
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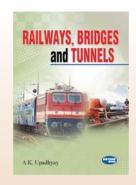
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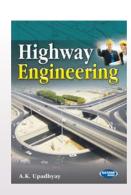
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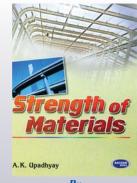
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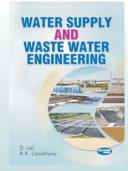
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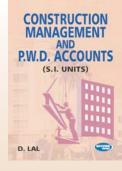
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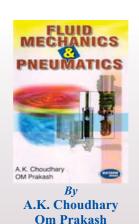
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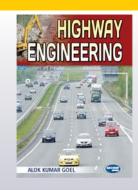
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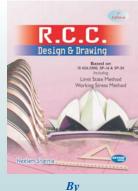
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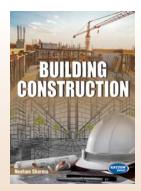
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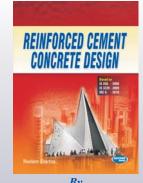
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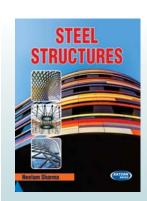
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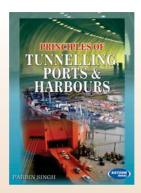
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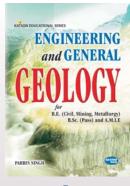
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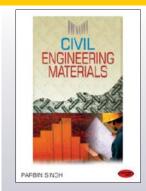
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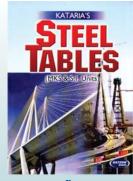
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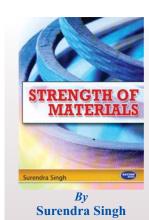
Plates on both Flanges (for using as girders) • Single Joist with additional Plates on both Flanges (for using as columns) • Double Joists with Flanges Butting and Welded Toe to Toe (for using as columns) • Double Joists Laced or Battened (for using as columns) • Double channels with Flanges Butting and Welded Toe to Toe (for using as columns) • Double channels Laced or Battened (for using as columns) • Safe loads for Single Angle Struts-Equal Angles (single bolted or single riveted end connections) • Safe loads for Single Angle Struts-Unequal Angles (double bolted or single riveted end connections) • Safe loads for Single Angle Struts-Equal Angles (Single bolted or double riveted end connections) • Safe loads for Single Angle Struts-Unequal Angles (double bolted or double riveted end connections) • Safe Concentric loads on Rolled Steel column sections (H-Beams being used as columns) • Safe concentric loads on Channel Sections (being used as columns) • Moment of Inertia of two Flanges per centimetre width about the x-x axis • Moment of Intertia of one web plate about its x-x axis • Preferred cut sizes of Structural Timber for Roof Tissues (3 to 20 m) • Safe permissible stresses for Indian Timbers (Standared Grade) • Reinforcement Percentage & Moment Factor for Beams (Singly reinforced rectangular sections) Reinforcement Percentage & Moment factor for Beams (Doubly Reinforced Rectangular Sections) • Reinforcement Percentage & Moment Factor for Beams (Singly Reinforced T-sections) • Recommended Clear Span to Effective Depth Ratios in Beams • Moment Capacity and Steel Area (Singly Reinforced Rectangular Sections) • Additional Moment Carrying Capacity (Doubly Reinforced Rectangular Sections) • Moment capacity (Per metre flange width of T-beam) • Shear Capacity of Concrete • Strength of Shear Reinforcement (Two Leg Vertical stirrups 10 mm Diameter) • Strength of Shear Reinforcement (Bent up bars) • Clear Span to Effective Depth Ratios in Slabs (Recommended values) • Minimum Reinforcement in Slabs Reinforcement Factor for Slabs (Per metre width of slabs) • Moment Capacity (per metre width of two way slabs) • Annexure I: S.I. Units for Structural Engineers • Annexure II: Conversion factors for S.I. Units • Annexure III: Conversion Table kgf to newtons • Annexure IV: Conversion table newtons to kgf • Annexure V: Guidelines for detailing of members.

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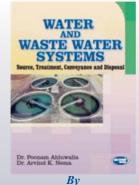
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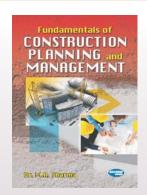




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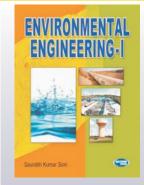
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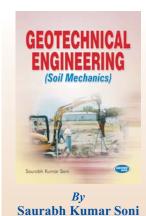
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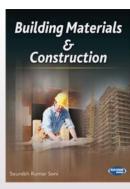
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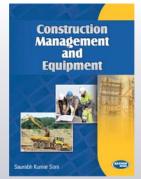
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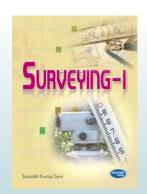
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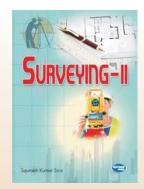
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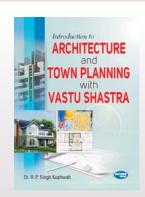
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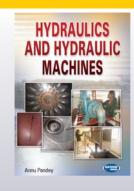
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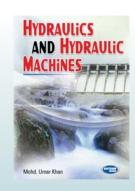
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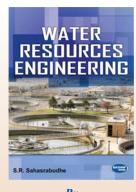
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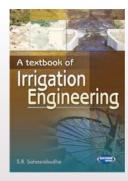
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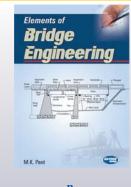
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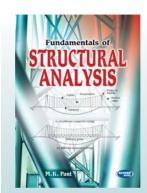
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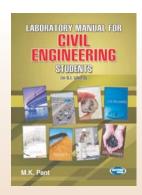
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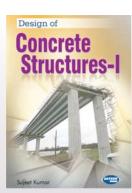
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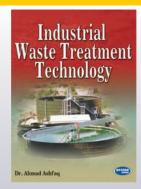
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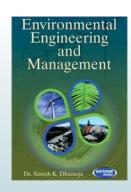
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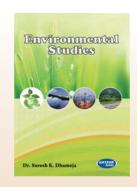
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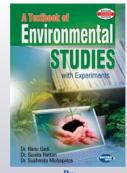
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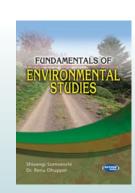
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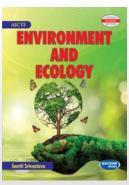
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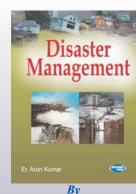
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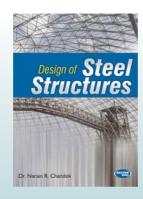
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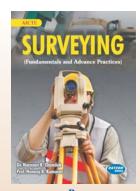
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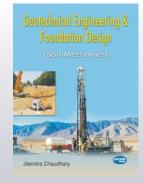
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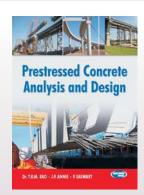
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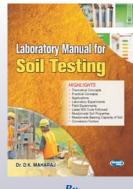
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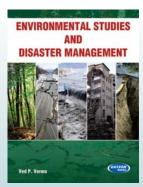
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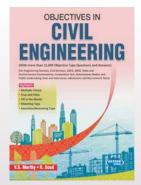
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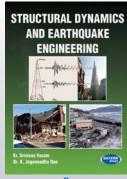
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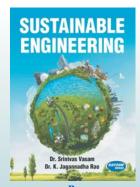
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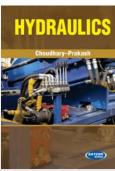
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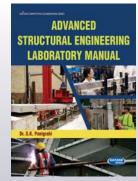
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• Particle size distribution of fine and coarse aggregates • Specific gravity and Water absorption test of fine aggregates • Specific gravity and Water absorption test of coarse aggregates • Unit weight and Void test of fine and coarse aggregates • Aggregate Crushing $value\ test\ of\ coarse\ aggregate\ \bullet \ Aggregate\ Impact\ value\ test\ of\ coarse\ aggregate\ \bullet \ Aggregate$ 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

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• 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

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Part 2 Study of Durability Properties for Concrete

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• To perform the M25 concrete mix design following IS 10262:2019 • To test an RCC beam under two-point load under flexure

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• (a) To draw the profile of the two hinged arch

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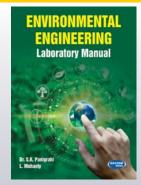
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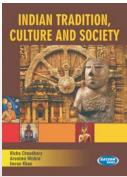
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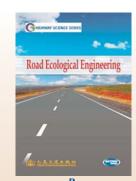
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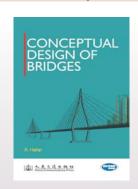
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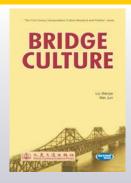
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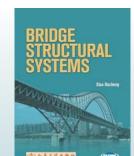
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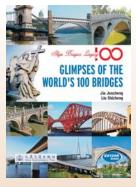
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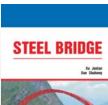
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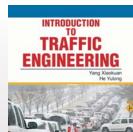
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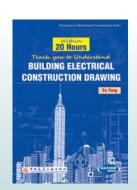
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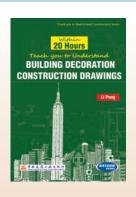


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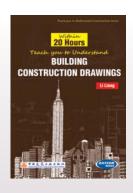
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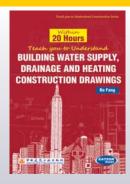
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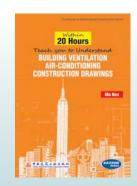
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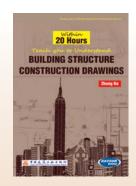
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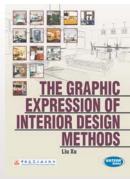
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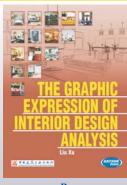
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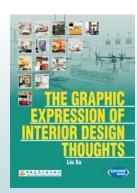
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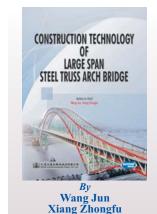
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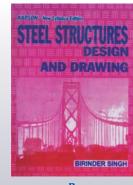


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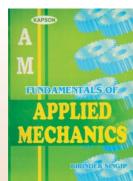
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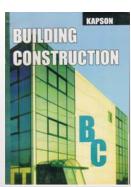
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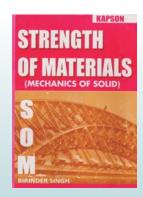
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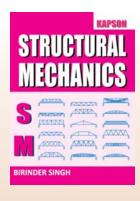
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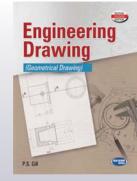
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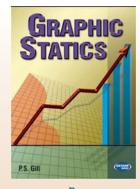
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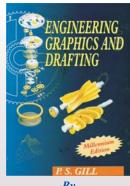
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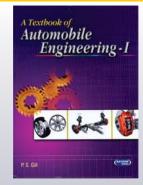
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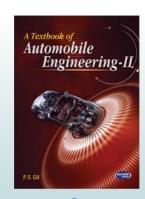
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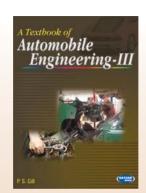
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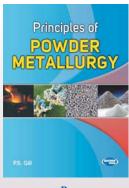
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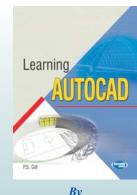
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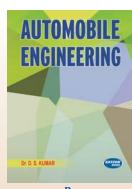


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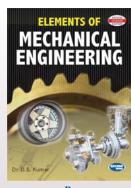
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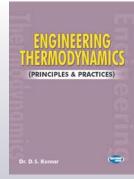
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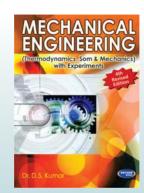
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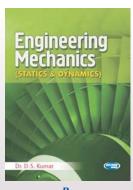
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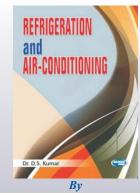
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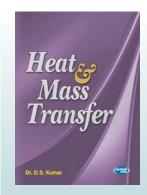
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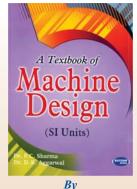
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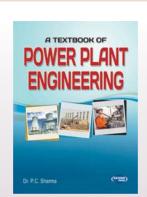


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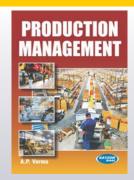
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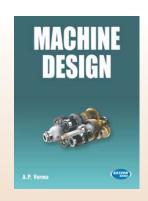
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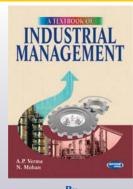
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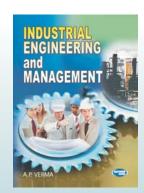
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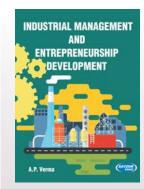
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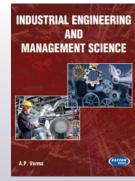
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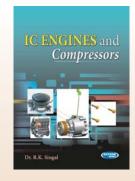
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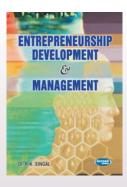
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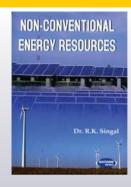
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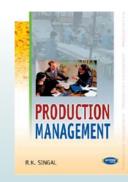


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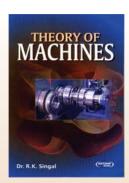
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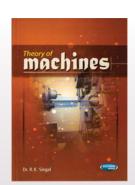
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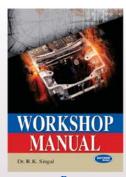
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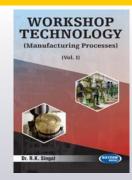
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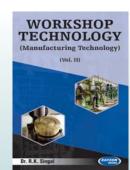
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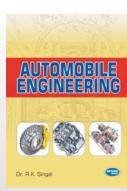
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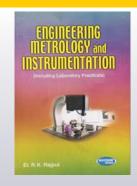
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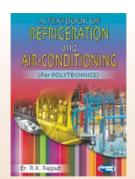
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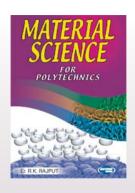
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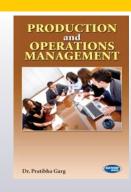
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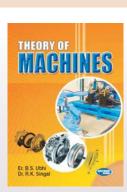
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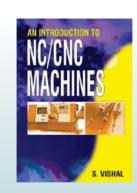
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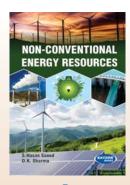
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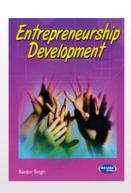
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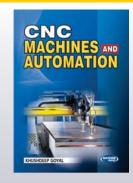
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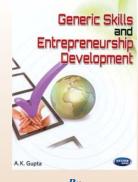
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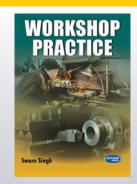
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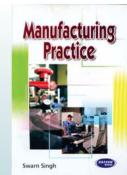
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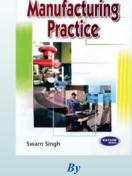
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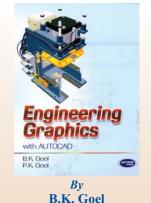
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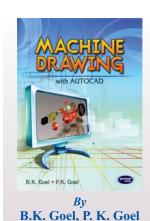
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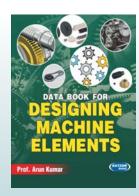
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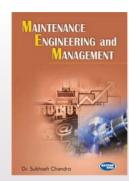
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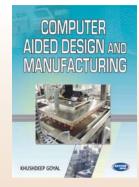
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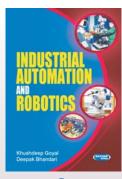
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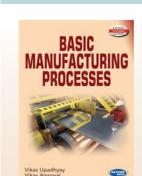
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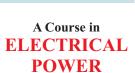


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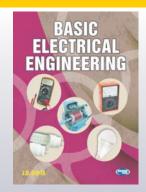
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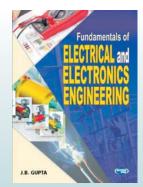
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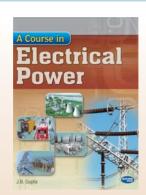
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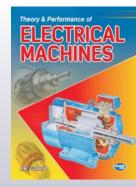
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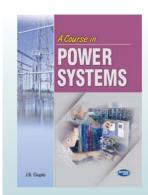
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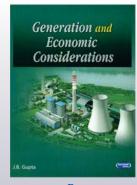
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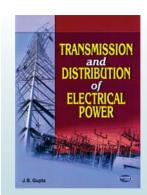
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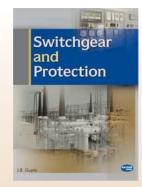
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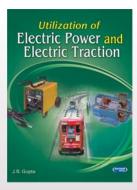
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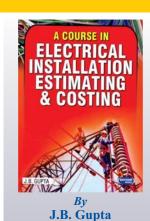
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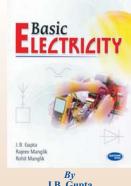
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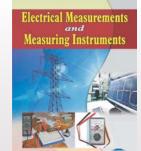
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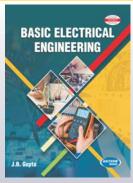
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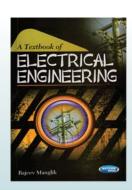
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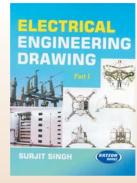


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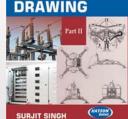


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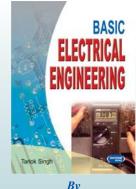
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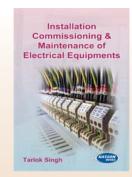
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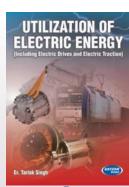
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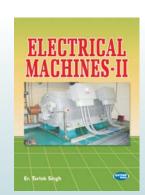
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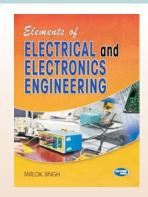
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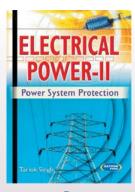
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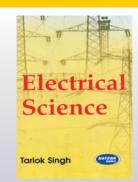
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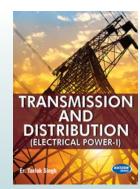
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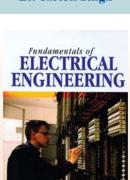
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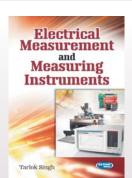
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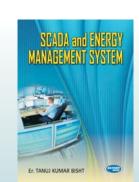
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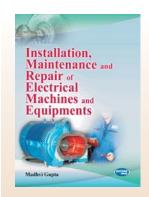
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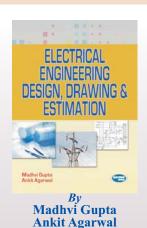
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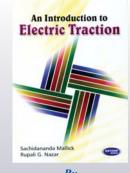
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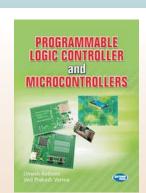
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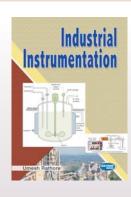
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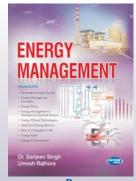
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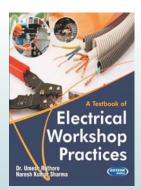
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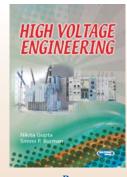
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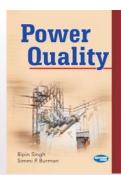
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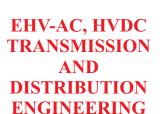
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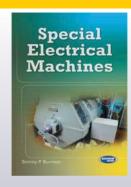
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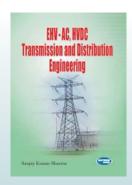
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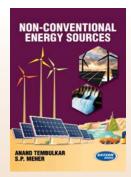
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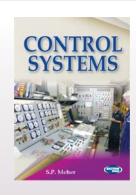
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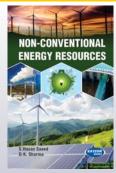
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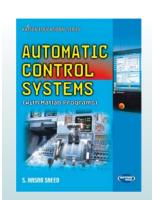
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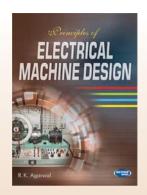
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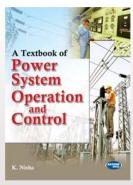
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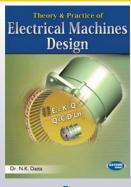
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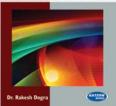


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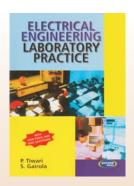
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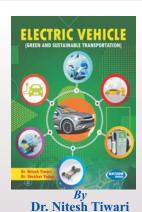
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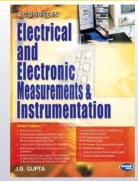
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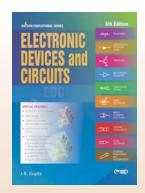
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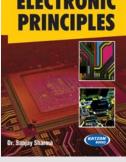
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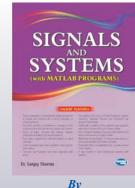
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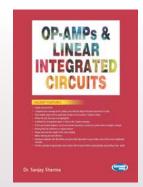
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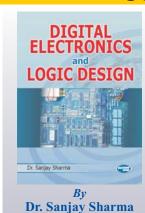
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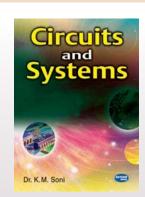
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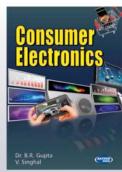
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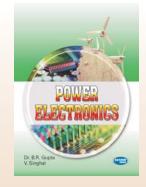
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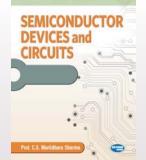
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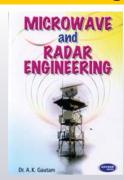
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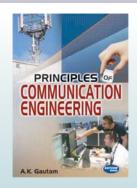
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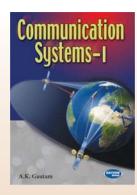


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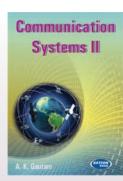
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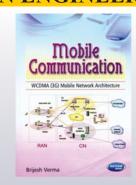
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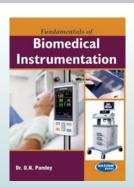
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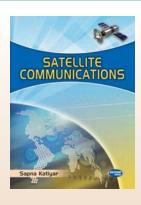
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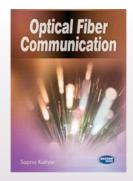
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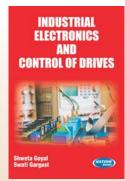
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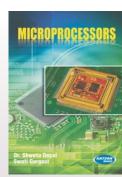
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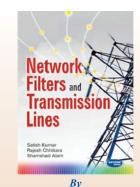
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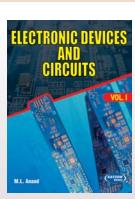
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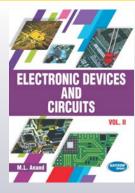
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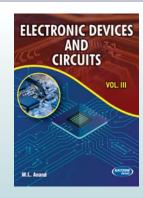
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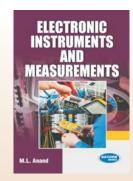
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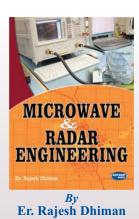
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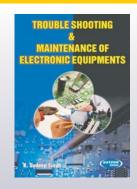
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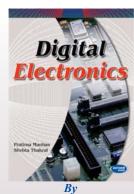
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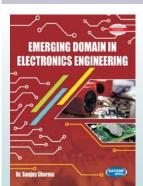
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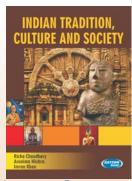
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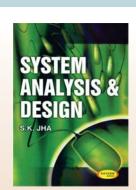
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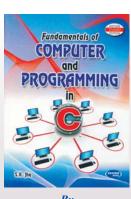
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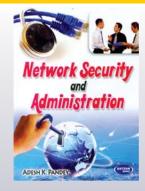
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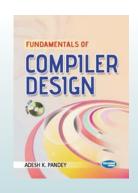
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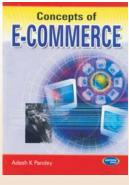
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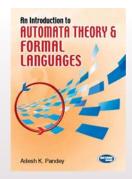
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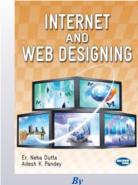
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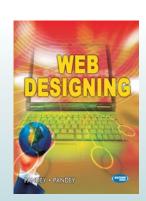
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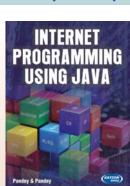
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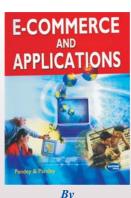
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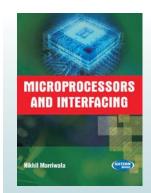
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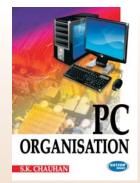
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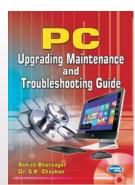
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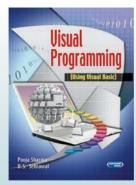
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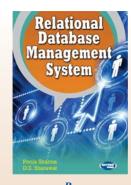
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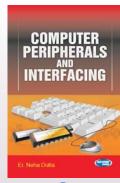
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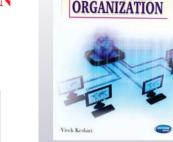
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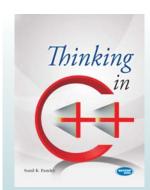
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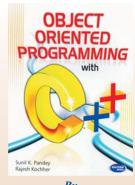
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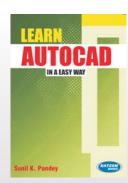
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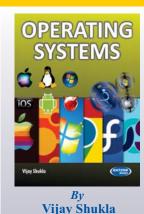
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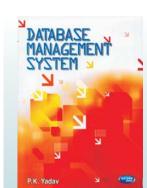
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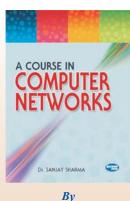


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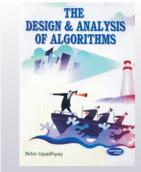
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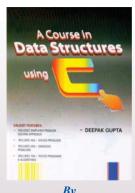
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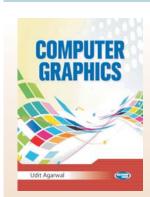
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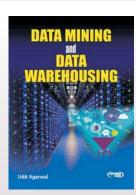
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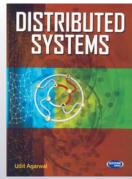
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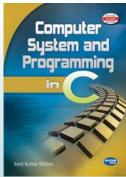
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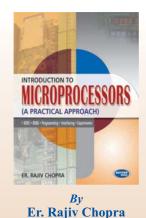
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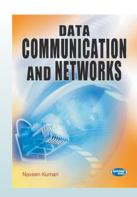


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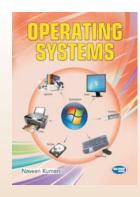
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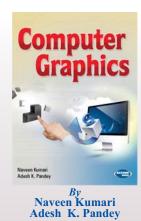
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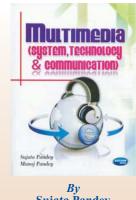
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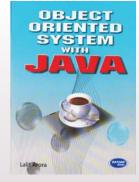
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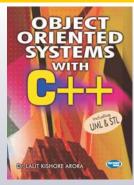
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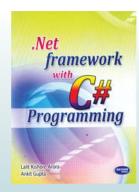
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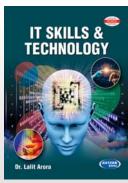
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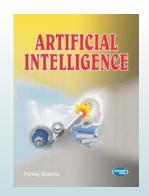
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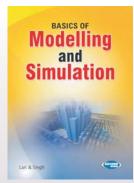
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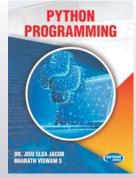
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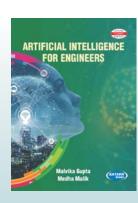
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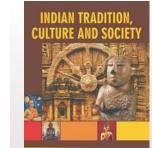
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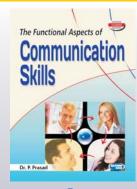
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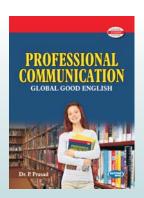
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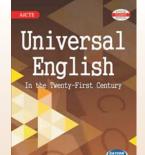
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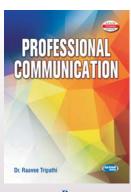
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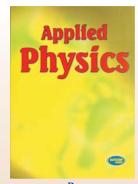
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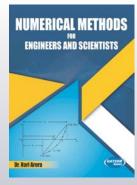
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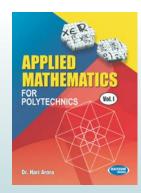
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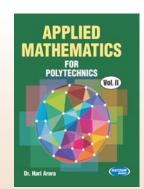
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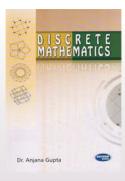
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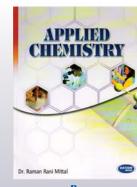
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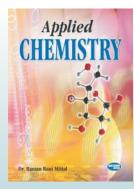
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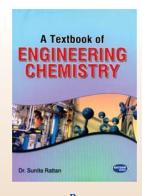
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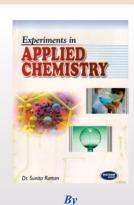
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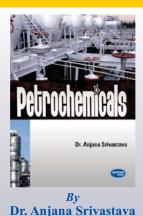
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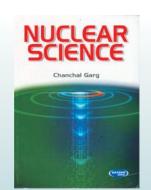
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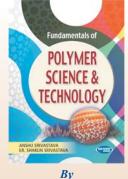
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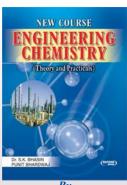
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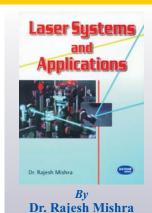
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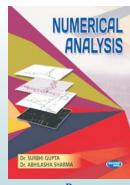
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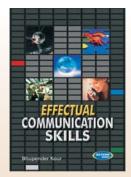
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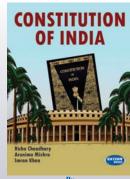
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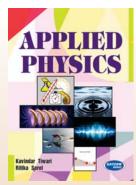
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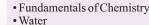
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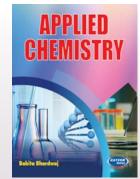
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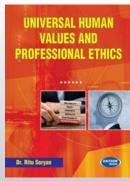
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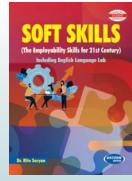
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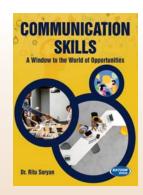
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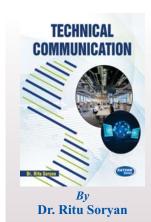


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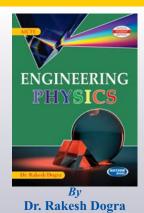
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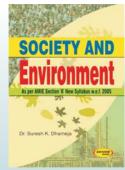
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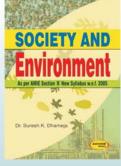
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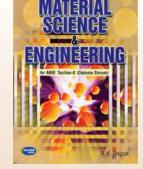
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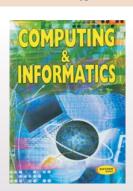


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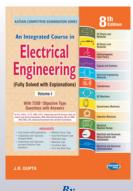
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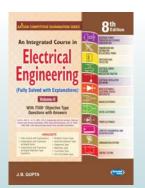
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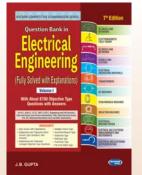
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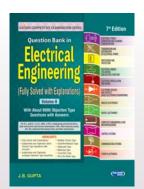
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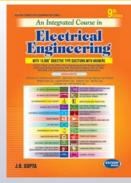
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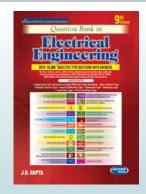
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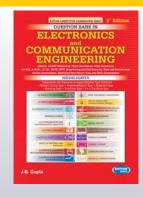
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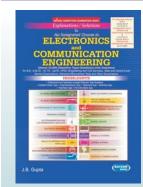
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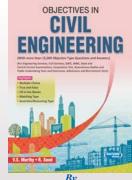
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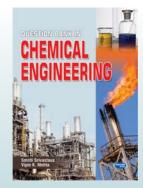


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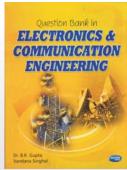


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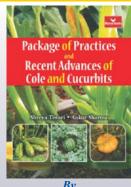
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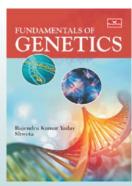
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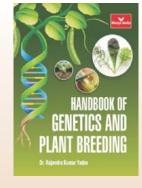
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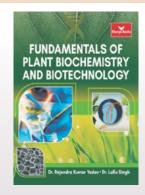
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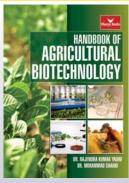
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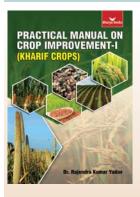
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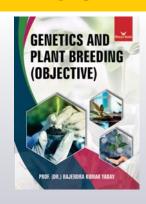
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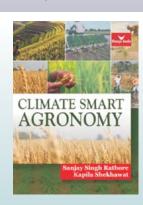
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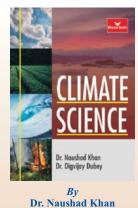
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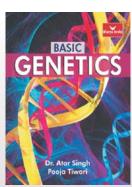
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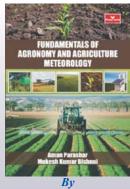
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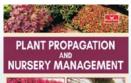
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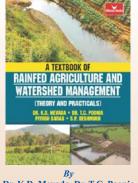




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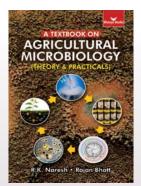
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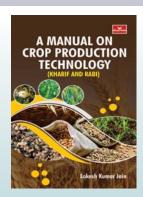
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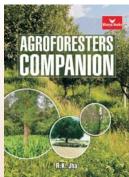
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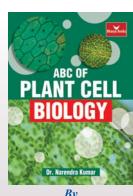
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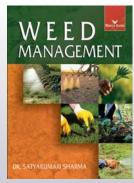
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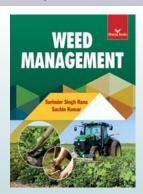
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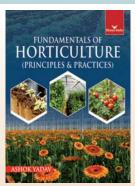


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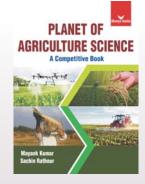
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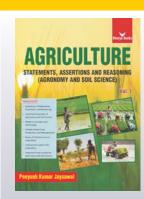
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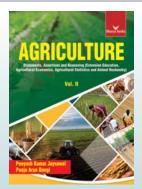
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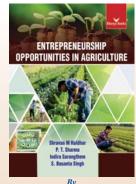
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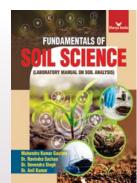
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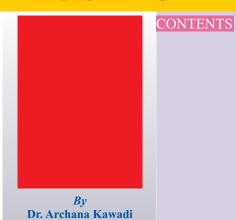
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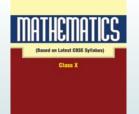
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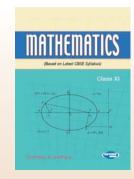
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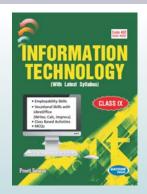
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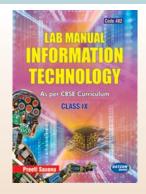
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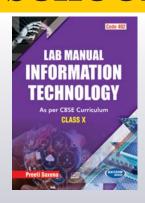
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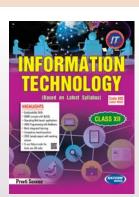
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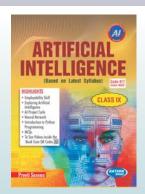
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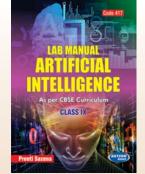
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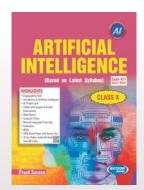
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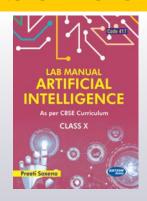
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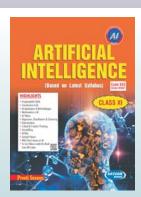
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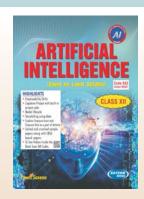
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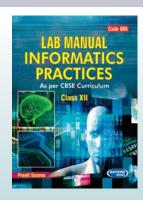
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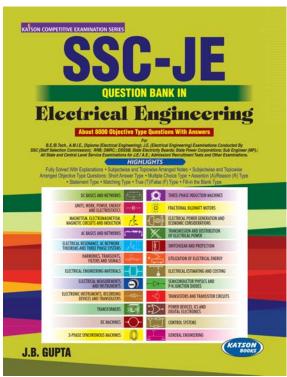
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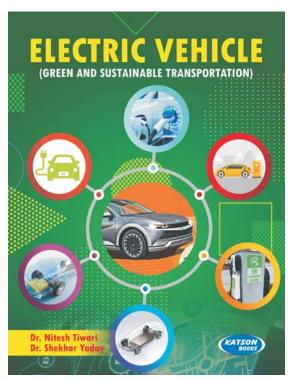
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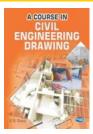
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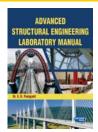
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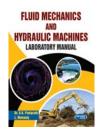
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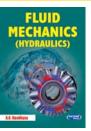


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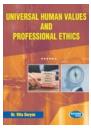




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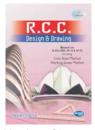


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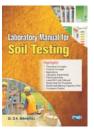


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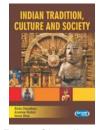




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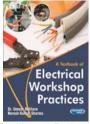
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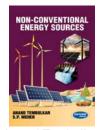
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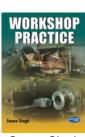
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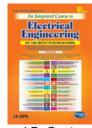
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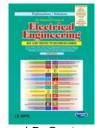
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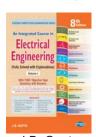
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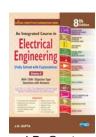
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