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Law of Thermodynamics Applied to Open Systems"; "3.8 Steady Flow Systems and Their Analysis"; "3.9 First Law Applied to Engineering Systems"; "3.10 Unsteady Flow Systems and Their Analysis"; "3.11 Limitations of First Law of Thermodynamics"; "Examples"; "Exercise"; "Chapter 4. Second Law of Thermodynamics"; "4.1 Introduction"; "4.2 Heat Reservoir"; "4.3 Heat Engine"; "4.4 Heat Pump and Refrigerator"; "4.5 Statements for 1Ind Law of Law of Thermodynamics"; "4.6 Equivalence of Kelvin-Planck and Clausius Statements of 1Ind Law of Thermodynamics"; "4.7 Reversible and Irreversible Processes"; "4.8 Carnot Cycle and Carnot Engine"; "4.9 Carnot Theorem and Its Corollaries"; "4.10 Thermodynamic Temperature Scale"; "Examples"; "Exercise"; "Chapter 5. Entropy"; "5.1 Introduction"; "5.2 Clausius Inequality"; "5.3 Entropy-A Property of System"; "5.4 Principle of Entropy Increase"; "5.5 Entropy Change During Different Thermodynamic Processes"; "5.6 Entropy and Its Relevance"; "5.7 Thermodynamic Property Relationship"; "5.8 Third Law of Thermodynamics"; "Examples"; "Exercise"; "Chapter 6. Thermodynamic Properties of Pure Susbtance"; "6.1 Introduction"; "6.2 Properties and Important Definitions"; "6.3 Phase Transformation Process"; "6.4 Graphical Representation of Pressure, Volume and Temperature"; "6.5 Thermodynamic Relations Involving Entropy"; "6.6 Properties of Steam"; "6.7 Steam Tables and Mollier Diagram"; "6.8 Dryness Fraction Measurement"

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#### Sommario/riassunto

**About the Book:** This book presents a systematic account of the concepts and principles of engineering thermodynamics and the concepts and practices of thermal engineering. The book covers basic course of engineering thermodynamics and also deals with the advanced course of thermal engineering. This book will meet the requirements of the undergraduate students of engineering and technology undertaking the compulsory course of engineering thermodynamics. The subject matter is sufficient for the students of Mechanical Engineering/Industrial-Production Engineering, Aeronautical Engineering, undertaking advanced courses in the name of thermal engineering/heat engineering/applied thermodynamics etc. Presentation of the subject matter has been made in very simple and understandable language. The book is written in SI system of units and each chapter has been provided with sufficient number of typical numerical problems of solved and unsolved questions with answers.

**Contents:** Fundamental Concepts and Definitions Zeroth Law of Thermodynamics First Law of Thermodynamics Second Law of Thermodynamics Entropy Thermodynamic Properties of Pure Substance Availability and General Thermodynamic Relations Vapour Power Cycles Gas Power Cycles Fuel and Combustion Boilers and Boiler Calculations Steam Engine Nozzles Steam Turbines Steam Condenser Reciprocating and Rotary Compressor Introduction to Internal Combustion Engines Introduction to Refrigeration and Air Conditioning Jet Propulsion and Rocket Engines Multiple Answer type Questions

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