

# Utilisation of Electric Power and Electric Traction



and Electric	Traction
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**Utilisation of Electric Power** 

# **Product Description**

A Text Book of Utilization of Electric Power and Electric Traction which is prepared on the basis of Engineering scientific study covering the syllabi of all the universities running electrical engineering courses, Engineering colleges and Technical Education Boards of all the states in India. This book is also meets the requirement of Foreign Universities where this subject is taught.



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#### **Table of Contents**

Chapter 1: Industrial Utilization. Chapter 2: Control of Industrial Motors. Chapter 3: Electric Heating. Chapter 4: Electric Welding. Chapter 5: Illumination. Chapter 6: Electrolytic Process. Chapter 7: Refrigeration and Air Conditioning. Chapter 8: Electric Traction. Chapter 9: Economic Aspects. Chapter 10: Objective Type Questions of Industrial Utilization.

# Author

#### G.C. Garg

Prof. G.C. Garg retired as registrar from the Technical Education Department Haryana, Chandigarh. Before that he was Head of Deptt. In Electrical Engineering at Govt. Institution of Engineering Ambala City, Haryana. After Graduation in Electrical Engineering he has gone 2½ years regular advance course in Electrical Engineering with specialization of Electrical Machines in T.T.T.I. Chandigarh in collaboration with Netherlands Govt. under the guidance of Prof. B. Mone who was authority in Electrical Machines and Electrical Power. He has also undergone one and a half year Industrial/Power Projects/Field and Transmission & Distribution Power Stations. He is fellow of the Institution of Engineers (India).



#### **Khanna Publishing House**



# **Electrical Machines - II**

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#### **Product Description**

This book on "Electrical Machines-II" is intended to serve as a text book for the students of Electrical Engineering in general and for those studying in institutions where AICTE model curriculum has been adopted. This book serves as a supplement to the already published book on "Electrical Machines-I". The topics covered in this book pertain to the syllabus contents as prescribed by AICTE for the course on "Electrical Machines II". Chapter 1. Describes the fundamental of AC machine windings. Here general terms associated with armature winding are defined first. Then, air-gap mmf waves produced by concentrated and distributed windings are explained. Concepts of winding factor is also given in this chapter. Chapter 2. Describes the concepts of constant magnetic field, pulsating magnetic field and rotation magnetic field. Chapter 3. Three-phase induction motor is described in detail so far as its constructional features, principle of operation, rotor and stator equivalent circuits and torque-slip characteristics are three-phase induction generator working and doubly-fed induction machines. Chapter 4: Constructional features, principle of operation, double-revolving field theory and starting methods of single-phase induction motor are described. Chapter 5. Pertains to the analysis of three-phase synchronous machines. In this chapter both cylindrical-rotor type and salient-pole type machines are discussed in detail. Steady-state phasor diagram of each type is developed for analysis purposes. Steady-state power-angle characteristics and operating characteristics are also presented in this chapter. The book contains a large number of worked examples to highlight the principles and concepts of the topics covered in this book. Unsolved problems at the end of each chapter are included for practice. Objective type questions included at the end of each chapter will help the readers to evaluate their comprehension of the chapter topics.

### **Table of Contents**

Chapter 1: Fundamentals of AC machine windings. Chapter 2: Pulsating and revolving magnetic fields. Chapter
3: Induction Machines. Chapter 4: Single- Phase Induction motors. Chapter 5: Synchronous machines.

### Author

**Dr. P.S. Bimbhra** retired as a professor of Electrical and Electronics Engineering from T.I.E.T. Patiala. A graduate of Punjab Engineering College, Chandigarh, he received his M.E. (Hons.) and Ph.D. from IIT Roorkee. He is fellow of the Institution of Engineers and a life member of ISTE. His areas of current interests include Electrical Machines, Power Electronics and Electric Drives.



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# **Electrical Machines - I**

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# **Product Description**

This book is written so that it serves as a text book for B.E./B. Tech degree students in general and for the institutions where AICTE model curriculum has been adopted. TOPICS COVERED IN THIS BOOK:- 1. Magnetic field and Magnetic circuit 2. Electromagnetic force and torque 3. D.C. Machines 4. D.C. Machines-Motoring and Generation SALIENT FEATURES:- 1. Self-contained, self-explanatary and simple to follow text. 2. Numerous worked out examples. 3. Well Explained theory parts with illustrations. 4. Exercises, objective type question with answers at the end of each chapter.

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Chapter 1: Magnetic Fields and Magnetic Circuits. Chapter 2: Electromagnetic Force and Torque. Chapter 3: The

Direct Current Machines Chapter 4: DC Machine-Motoring and Generation Chapter 5: Transformers Khanna Publishing House

#### **Authors**

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