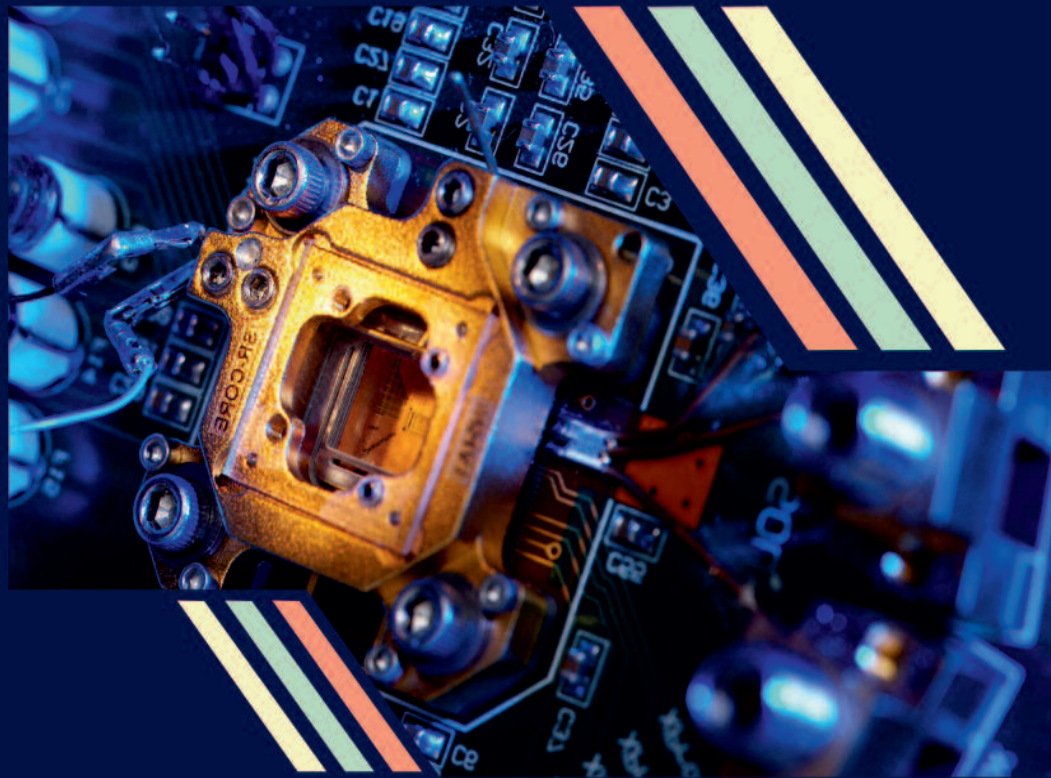


# BASIC FORMULÆ BOOK FOR ELECTRICAL ENGINEERING

(More than 1000 formulae covering all aspects of Electrical Engineering)

• Dr. D.P. Kothari • Rakesh B. Dakhare



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# BASIC FORMULAE IN ELECTRICAL ENGINEERING

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(More than 1000 formulae covering all aspects of Electrical Engineering)

This book is useful for all Electrical Engineering Students,  
Polytechnic Students, Students preparing for Engineering and  
Civil Services, CPWD, PWD, Railways, MPSC, GATE, GRADE IETE,  
AMIE and other Technical Examinations.

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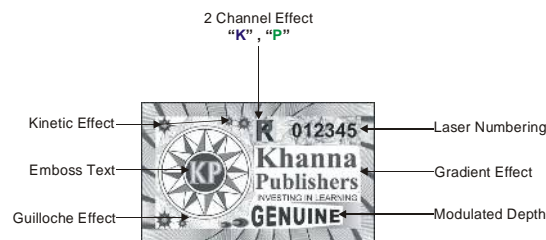
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***DEDICATED TO***

*My sisters Shrimati Jamnabai Mohta and Late Shrimati Sunita Rathi  
Dr. D. P. Kothari*

*My parents Shri Bhauraoji Dakhare and Shrimati Girjabai Dakhare  
And*

*My Paras-Priyani (Nephew-Niece)  
Rakesh Dakhare*

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**Dr. D.P. Kothari**  
**Rakesh B. Dakhare**

Nagpur  
April 2018

# PREFACE

The energy demand is increasing daily and to satisfy this demand many power plants are to be installed in every country. This requires capital as well as manpower. The manpower should be skilled well and should have all basic knowledge. Other than power plant, the manpower required in many other national, international technological giant companies, research labs etc. By seeing this scenario, only knowledgeable manpower will be in demand. This book provides all the basics as well as revision of maximum subjects of electrical engineering via formulae.

This book will be extremely handy and useful for the electrical engineering students of undergraduate, graduate, AMIE, grade IETE, IES, IAS, Public Service Commissions of all the states, NTPC, BHEL, Power Grid, CPRI and other companies such as GENCO, TRANSCO and DISTRIBUTION CO., etc.

This has resulted from the vast experience of teaching and research of the authors and large no. of books co-authored by the authors.

We will be grateful to the readers if they point out any errors and suggestions for the further improvement of the book.

**Dr. D.P. Kothari**

**Rakesh B. Dakhare**

## ABOUT AUTHER

Dr. D. P. Kothari obtained his BE (Electrical) in 1967, ME(Power Systems) in 1969 and Ph.D. in 1975 from BITS, Pillani, Rajasthan. From 1969 to 1977, he was involved in teaching and development of several courses at BITS Pillani. Earlier Dr. Kothari served as Vice Chancellor, VIT, Vellore, Director in-charge and Deputy Director (Administration) as well as Head in the Centre of Energy Studies at Indian Institute of Technology, Delhi and as Principal, VRCE, Nagpur. He was visiting professor at the Royal Melbourne Institute of Technology, Melbourne, Australia, during 1982-83 and 1989, for two years. He was also NSF Fellow at Perdue University, USA in 1992. He also taught at Melbourne University Australia for one semester in 1989.

Dr. Kothari, who is a recipient of the most Active Researcher Award, has published and presented 812 research papers in various national as well as international journals, conferences, guided 50 Ph.D scholars and 68 M. Tech students, and authored 50 books in various allied areas. He has delivered several keynote addresses and invited lectures at both national and international conferences. He has also delivered 42 video lectures on YouTube with maximum of 40,000 hits.

Dr. Kothari is a Fellow of the National Academy of Engineering (FNAE), Fellow of Indian National Academy of Science (FNASc), Fellow of Institution of Engineers (FIE), Fellow IEEE ,Hon. Fellow ISTE and Fellow IETE.

His many awards include the National Khosla Award for Lifetime Achievements in Engineering (2005) from IIT, Roorkee. The University Grants Commission (UGC), Government of India has bestowed the UGC National Swami Pranavandana Saraswati Award (2005) in the field of education for his outstanding scholarly contributions.

He is also the recipient of the Lifetime Achievement Award (2009) conferred by the World Management Congress, New Delhi, for his contribution to the areas of educational planning and administration. Recently he received Excellent Academic Award at IIT, Guwahati by NPSC-2014.

In last two months he has received 6 Life Time Achievement awards by various agencies on 19th February, 4th March, 11th March, 18th March, 20TH March and 25th March 2016, respectively. On 20th April 2016 he received 'Living Legend' Award in Chennai Conference.

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Rakesh Bhaurao Dakhare, currently working as Asst. Professor at GH Raisonni Academy of Engineering & Technology, Nagpur. He completed his B.E. in 'Electrical Engineering', M.Tech in 'Integrated Power System', qualified GATE, 2013, P.E.T., 2016 (Nagpur University)

The idea of this book was originated from the competition point of view. As we all know that an Electrical Engineering have a vast area of knowledge. No one can remember all the syllabus or it is very difficult to do same. This book provides you the clear idea of remembering the subject via formulae. Because every Exam whether it is of Practicals, college/university exams, any other competitive exams such as UPSC, MPSC, State Service examination, Railway, SSC and other exams, the numericals are mandatory. Student always get confused in numericals due to exam pressures or lack of practice. So this book provides you the effective way of QUICK REVISION of Electrical Engineering via formulae.

So students are requested to carry this book all the time whenever there is an Exam schedule. This book also provides some blank space after every chapter so that students are able to create their own shortcuts to remember the subject.

*“Remember Engineering via formulae”*

Rakesh B. Dakhare  
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