15 Recommended Books for GATE EC 2019

If you plan to get admission in a leading college or a reputable PSU, there is no better opportunity than **GATE 2019** Exam. But as you already know, GATE preparations are difficult. A lot of hard work and concentration is necessary for successful results in GATE EC exams. The competition for GATE Exam is always high and so you must start preparing soon. The first task at your hand is to go through the complete GATE syllabus. Once you are done with this, you will require study material that provides complete preparation for it. Therefore, here we are giving you **15 Recommended Books for GATE EC Engineering 2019**. You can also download this list in PDF by clicking on the button below.

All the material you follow to study for GATE EC (Electronics & Communications Engineering) should:

- **teach you the theoretical basis** of the discipline
- build your **conceptual understanding**
- take frequent tests to **evaluate your performance**
- be able to **provide solutions**

Hence, we strongly recommend to follow these books which are selected based on these important features.

Best Books for GATE EC 2019

For Electronics & Communications Engineering (ECE), these are the books you should use for your preparations. Many of our experts in GATE recommend them and multiple candidates have tested these books by using in the exams.

Topic	Book	Author
Communications	Modern Digital and Analog CommunicationsSystems	B.P. Lathi
Signals & Systems	Signals and Systems	Alan V. Oppenheim, AlanS.Willsky, S.Hamid Nawab
Electronic Devices	Semiconductor Physics and Devices	Donald A. Neamen
Electromagnetic Theory	Principles of Electromagnetics	Matthew N. O. Sadiku
Control Systems	Control Systems Engineering	M. Gopal, I. J. Nagrath
	Automatic Control Systems	Benjamin Kuo
Digital Electronics	Digital Design	M. Morris Mano
	Modern Digital Electronics	R. P. Jain
	Microprocessor Architecture, Programming and Applications with the 8085	Ramesh Gaonkar
Analog Circuits	Microelectronic Circuits: Theory and Applications	Adel S. Sedra, Kenneth Carless Smith
	Op-Amps & Linear Integrated Circuits	Ramakant Gayakwad
Engg. Maths	Higher Engineering Mathematics	B. S. Grewal
	GATE Engineering Mathematics: Multiple Choice Questions	R. K. Kanodia
Network Theory	Engineering Circuit Analysis	William H. Hayt
	Network Analysis	Mac Van Valkenburg

Details about Books for GATE EC

Read the details about GATE EC books that will give you the complete importance, necessary introduction and benefits of the texts.

1. Communications

- **Modern Digital and Analog Communications by B. P. Lathi**

The book's syllabus runs similarly to that of GATE EC and the depth and span of the topics covered are well tuned in this book. As far as analog communication portion is concerned, all books more or less fall in the same category. Good books like this one are equally good for the Digital communication part. Apart from this, Communication Systems by Simon Haykin is also a good book that can be considered for additional reference material but always as a secondary option because the book starts at a level where it assumes a certain stage of understanding of communication systems already in the student. Communication Systems by Sanjay Sharma is an equally good option as B.P Lathi if one is inclined towards simpler language.

2. Signals & Systems

- **Signals and Systems by Alan V. Oppenheim, Allan S. Willsky, S. Hamid Nawab**

This book provides the basics for Signals and Systems and approaches every problem from the basic concept. All the theory and basics required are neatly explained. The concepts are well defined and the exercises after each chapter help you master the concepts. The solution manual is also available online.

3. Electronic Devices

- **Semiconductor Physics and Devices by Donald Neamen**

This is the best book for electronic devices, but one should have the discretion to study only the topic that pertains to GATE because its coverage is well in excess of the GATE syllabus. The book is replete with both example and practice problems. A student at ease with the book should feel confident in taking up any problem on electronic devices.

4. Electromagnetic Theory

- **Principles of Electromagnetics by Matthew N. O. Sadiku**

This book is a one stop solution for all the GATE topics that come under Electromagnetic Theory. As with all good books, the book lays equal stress on theory and practice. The theory is succinct and hence keeps it interesting all the time. The book has enough examples and practice problems. Apart from this, you can do **vector calculus portion from Introduction to Electrodynamics by David Griffiths.** Once you read the chapter, you will understand the sense in this prima facie suggestion.

5. Control Systems

- **Control Systems Engineering by M Gopal and I. J. Nagrath**
- **Automatic Control Systems by Benjamin C Kuo**

These books are sufficient for GATE and also IES. All concepts are explained in a good way with some examples. Few important topics to refer in Control Systems are Domain Analysis, State Space analysis, RH criterion, Root Locus, Bode Plot, Nyguist Plot.

6. Digital Electronics

- **Digital Design by M. Morris Mano**
- **Modern Digital electronics by R P Jain**
- **Microprocessor Architecture, Programming and Applications with 8085 by Ramesh Gaonkar**

As Digital electronics is a scoring subject we need to concentrate more on the important concepts which are listed above and all these important topics are explained in a clear manner. It is a good book as it explains the concepts from the viewpoint of a beginner. For microprocessor, Gaonkar is a standard book in which instruction set and programming of 8085 is explained in a good manner.Few important topics in this subject are realization of logic gates, multiplexer, semiconductor memories, Counters, adders, decoders, Analog to digital converters, Instruction set of 8085, Memory mapping based problems, implementing Boolean functions using MOS transistors.

7. Analog Circuits

- **Microelectronic Circuits: Theory and Applications by Adel S. Sedra and Kenneth Carless Smith**
- **Op. Amps & Linear Integrated Circuit by Ramakant Gayakwad**

Sedra and Smith's book is good and useful as it explains the BJT concepts and Diode Concepts. Gayakwad is the best book mainly dedicated to Op Amp and it will cover all concepts and some example problems also. Op Amp topic is very important for GATE and carries good weightage. Important topics from the subject are clippers, clampers, BJT amplifiers, applications of OP amp, power amplifiers, biasing, feedback amplifiers, power amplifiers, efficiency calculations and multivibrators.

8. Engineering Mathematics

- **Higher Engineering Mathematics by B. S. Grewal**
- **GATE Engineering Mathematics: Multiple Choice Questions by R.K. Kanodia**

Grewal's book will cover all topics that are important for GATE. To score good marks in mathematics, first study the concepts in this book and then practice all the problems given in Kanodia. Important topics to focus on are Calculus, Vector Calculus, Linear

algebra, Differential Equations, Probability , Newton Raphson's Method, Complex Variables, Laplace transforms and Z transforms.

9. Network Theory

- **Engineering Circuit Analysis by William H. Hayt**
- **Network Analysis by Mac Van Valkenburg**

Van Valkenburg's book is the standard book which will cover all important concepts for GATE. Transient analysis and networks theorems are discussed in this book with good explanations. Important topics to cover are Maximum Power Transfer Theorem, Thevinin's Theorem, Norton's Theorem, Start to delta conversion, AC transients, Steady State Sinusoidal Analysis Based Problems, Number of Trees in a Graph, Fundamental Cutset, Tieset, Series Resonance and Parallel Resonance.

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