ENGINEERING MATHEMATICS THROUGH APPLICATIONS

PARAS RAM



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THE BOOK

Engineering Mathematics through applications is designed to serve as a core text in first three semesters for undergraduate students of all branches of engineering of various Indian universities including NIT's and State Engineering Colleges. It presents the topic of Algebra and Calculus with applications including the Matrices, Complex Numbers Multiple Integrals and Vector Calculus; Ordinary and Partial Differential Equations with applications, Laplace transforms; Numerical Methods with applications.

SALIENT FEATURES OF THE BOOK

- This book meets the aims and objectives of learning this important subject of mathematics in B.Tech. program.
- Core concepts are presented through a large number of solved graded model problems (around 750) followed by typical examples in an innovative and lucid manner.
- Use of language has been kept in minimum. An attempt has been made to explain the subject through maximum use of geometries, wherever possible. All formulae involved in the chapters are given in the tabular form.
- Reasonably good numbers of relatively easy problems (around 500) are given under assignments and MCQ`s in each chapter for practice purpose.
- Stereotype questions have been avoided and a mention is made about the questions which came during last five years in various technical universities and NIT`s during last five years.
- The text has been supplemented through 'Notes', 'Observations' and 'Remarks', to clarify the principality of the subject.

With these exclusive features, this would serve as a preferred student friendly text book in comparison to the other available books on Engineering Mathematics.

THE AUTHOR

Dr. Paras Ram is Head, Department of Mathematics, National Institute of Technology, Kurukshetra. He has 17 years of experience in teaching and research and has frequently been associated with several reputed technical universities and institutes for curriculum design and setting of question paper in mathematics for B.Tech. programs. As a resource person, he has participated in large number of teaching and research programs organized by various universities. Besides, he has published many research papers in national/international journals and presented papers at conferences.

CONTENTS

- **1.** Matrices and Their Applications
- 2. Geometrical Applications of Differentiation
- **3.** Geometrical Applications of Integration (quadrature, rectification, volumes and surfaces of revolution)
- 4. Partial Differentiation and Their Applications (functions of two or more variables)
- 5. Multiple Integrals and Their Applications
- 6. Complex: Numbers and Functions
- 7. Vector Calculus with Applications
- 8. Ordinary Differential Equations of First Order
- 9. Applications of First Order Differential Equations
- **10.** Linear Differential Equations of Second and Higher Order
- **11.** Applications of Linear Differential Equations
- **12.** Partial Differential Equations
- **13.** Laplace Transforms and Their Applications
- 14. Finite Difference and Interpolation, Numerical Differentiation and Integration
- **15.** Difference Equations with Applications
- 16. Solutions of Algebraic and Transcendental Equations

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