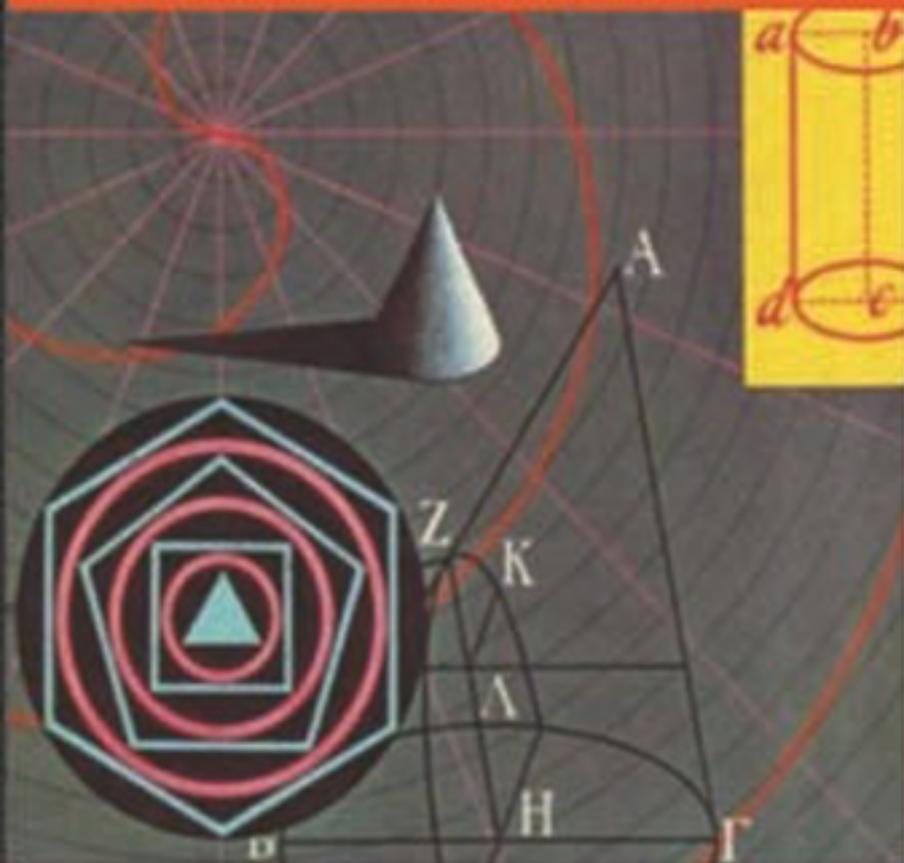


Comprehensive
MATHEMATICS

WITH
BANK OF QUESTIONS

MATHEMATICS MATHEMATICS MATHEMATICS MATHEMATICS



CLASS XI

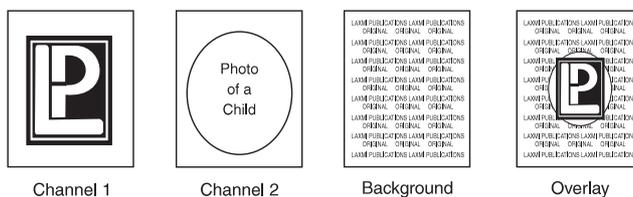
MATHEMATICS MATHEMATICS MATHEMATICS MATHEMATICS
MATHEMATICS MATHEMATICS MATHEMATICS MATHEMATICS

Comprehensive
MATHEMATICS
FOR CLASS—XI

WIN A CASH AWARD OF ₹ 200.00

It has come to our notice that some booksellers are fraudulently **selling fake/duplicate copies** of some of our fast selling titles.

In our sincere efforts to provide you with our genuine books and to protect you against these counterfeit books, Laxmi Publications (LP) has put a Hologram on the cover of **some of its fast selling** titles. The Hologram displays a unique 3D multi-level, multi-colour effect from different angles. It has the following three levels of flat graphics merged together. The background artwork seems to be 'under' or 'behind' the Hologram and gives the illusion of depth unlike the fake Hologram on the fake/duplicate books.



Presently, only some titles have got the Holograms. In this case, **Comprehensive Mathematics for Class XI** (priced at ₹ 595.00) has got the Hologram.

If you or any of your friends finds anywhere in India/abroad any book of this Edition without the LP Hologram, he/she is requested to write to us at **M/s LAXMI PUBLICATIONS PVT. LTD., 7/19, Ansari Road, Daryaganj, New Delhi-110002**, giving the name and address of the bookseller from where he/she purchased this book, together with the photocopy of this page and the front title cover of the book. He/She will be sent a **cash award of ₹ 200.00**.

How to decide if the book is genuine or fake ?

1. The above information may or may not be printed.
2. The counterfeit edition of the book may have no LP Hologram or if it has, it will be without the illusionary depth as described above.

What is the harm in purchasing duplicate books ?

- Poor quality of paper and printing which affect your eyes.
- No royalty to authors who are scholars and have put their hard labour in writing the book, thus depriving them of their intellectual rights.

Warning : Selling or buying pirated books is an offence. Legal action shall be taken against the bookseller(s) and student(s) or whoever found guilty of such an offence in any way.

Comprehensive
MATHEMATICS

FOR CLASS—XI

Strictly as per the Latest Syllabus onwards for
Central Board of Secondary Education (CBSE)
and
**State Boards of Chhattisgarh, Haryana, Bihar, Punjab, Himachal Pardesh,
Nagaland, Manipur, Jharkhand, Kerala, Mizoram and Meghalaya,
Uttaranchal and other States following
NCERT Curriculum**

By

PARMANAND GUPTA

B.Sc.(Hons.),M.Sc.(Delhi)

M.Phil.(KU), Pre.Ph.D.(IIT Delhi)

Associate Professor and Head, Deptt. of Mathematics

Indira Gandhi National College, Ladwa

KURUKSHETRA UNIVERSITY

Member, Faculty of Sciences

KURUKSHETRA UNIVERSITY

Haryana

LAXMI PUBLICATIONS (P) LTD

BANGALORE ● CHENNAI ● COCHIN ● GUWAHATI ● HYDERABAD

JALANDHAR ● KOLKATA ● LUCKNOW ● MUMBAI ● PATNA

RANCHI ● NEW DELHI

© All rights reserved with the Publishers. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior written permission of the publisher.

Published by :

LAXMI PUBLICATIONS (P) LTD

113, Golden House, Daryaganj,

New Delhi-110002

Phone : 011-43 53 25 00

Fax : 011-43 53 25 28

www.laxmipublications.com

info@laxmipublications.com

Edited by :

Rama Gupta, M.A.

Price : ₹ 595.00 Only.

New Edition

OFFICES

© Bangalore	080-26 75 69 30	© Kolkata	033-22 27 43 84
© Chennai	044-24 34 47 26	© Lucknow	0522-220 99 16
© Cochin	0484-237 70 04, 405 13 03	© Mumbai	022-24 91 54 15, 24 92 78 69
© Guwahati	0361-251 36 69, 251 38 81	© Patna	0612-2300097
© Hyderabad	040-24 65 23 33	© Ranchi	0651-221 47 64
© Jalandhar	0181-222 12 72		

T11-8802-595-COMP. MATHS XI

Typeset at : Goswami Associates, Delhi.

C—

Printed at : Ajit Printers, Delhi.

*Dedicated to my teachers whose
teachings have made me able
to grasp some of the
fundamentals of
Mathematics*

CONTENTS

Chapters

Pages

UNIT—I. SETS AND FUNCTIONS

1. Sets	1
2. Relations	44
3. Functions	59
4. Measurement of Angles	91
5. Trigonometric Functions	103
6. Trigonometric Functions of Sum and Difference of Two Angles	139
7. Transformation Formulae	155
8. Trigonometric Functions of Multiple and Sub-multiple Angles	167
*9. Conditional Identities	184
10. Graphs of Trigonometric Functions	190
11. Trigonometric Equations	200
12. Sine and Cosine Formulae	221
*13. Area of a Triangle and Circles Associated with a Triangle	239

UNIT—II. ALGEBRA

14. Mathematical Induction	248
15. Complex Numbers	266
16. Quadratic Equations	316
17. Linear Inequalities	327
18. Permutations	362
19. Combinations	399
20. Binomial Theorem	416
21. Arithmetic Progressions	455
22. Geometric Progressions	488
23. Some Special Series	531

*Chapters 9 and 13 are not mentioned in the syllabus. These chapters are only for those science students who are to take engineering entrance exams.

UNIT—III. COORDINATE GEOMETRY

24.	Brief Recall of Two Dimensional Coordinates	542
25.	Shifting of Origin	561
26.	Straight Lines	567
27.	Conic Sections	643
28.	Introduction to Three Dimensional Geometry	718

UNIT—IV. CALCULUS

29.	Limits	741
30.	Differentiation	792

UNIT—V. MATHEMATICAL REASONING

31.	Mathematical Reasoning	836
-----	------------------------	-----

UNIT—VI. STATISTICS AND PROBABILITY
--

32.	Statistics	866
33.	Probability	909

BANK OF QUESTIONS

(In this '**Bank of Questions**', five model test papers are provided with answers. These papers are based on **CBSE** examination pattern. The students are advised to solve each paper independently as if he/she is sitting in the examination hall and his/her targetted time to complete each paper must be $2\frac{1}{2}$ hours)

Model Test Paper 1		973
Model Test Paper 2		975
Model Test Paper 3		977
Model Test Paper 4		979
Model Test Paper 5		981

Complete solutions of latest AIEEE and IITJEE papers are given in <i>Comprehensive</i> Mathematics XII book
--

PREFACE TO THE REVISED EDITION

This book is designed for use as a textbook and also as a supplement to all current standard texts for the prescribed course. In revising the present edition, the strengths of the prior editions have also been retained. I express my heartfelt thanks to my worthy colleagues for conveying their suggestions and compliments and also for reposing faith in this book. It is a matter of great satisfaction that this book is serving a commendable majority of students in India and CBSE schools abroad.

The following are some of the salient features of the present edition :

- ★ The present edition is in strict conformity with the latest revised syllabus of ‘**CBSE Delhi**’.
- ★ The subject-matter of each chapter has been thoroughly revised keeping in view the allocation of marks to each portion of the new syllabus.
- ★ Each chapter begins with a clear statement of pertinent definitions, principles and theorems together with illustrative and descriptive material.
- ★ Each chapter closes with the ‘**summary**’ of important formulae covered in that chapter.
- ★ It has large number of solved problems to illustrate and amplify the theory and also to bring into sharp focus those fine points without which the student continually feels himself on unsafe ground.
- ★ It has large number of unsolved problems with answers to serve as a complete revision of the material in each chapter.
- ★ A new feature ‘**Working Rules for Solving Problems**’ has been introduced. This would help the students to tackle various types of problems more confidently.
- ★ The problems, which are comparatively harder, are provided with suitable hints. The author has not desired to dishearten the students by incorporating very tedious problems, which are not expected from the students of +2 level.
- ★ Keeping in view the present trend of examination papers, each exercise in the book has been divided into three parts containing :
 - **Very Short Answer Type Questions**
 - **Short Answer Type Questions**
 - **Long Answer Type Questions**
- ★ Problems from **NCERT** textbooks have also been included in the book.
- ★ To protect the interest of science students, special sections ‘**Additional Material**’ and ‘**Additional Questions**’ have also been added at the end of each chapter. This would give them a feel of the standard of questions being asked in Engg. entrance examinations.
- ★ It has ‘**Bank of Questions**’ containing five **Model Test Papers**.

I firmly believe that there is always scope for improvement. Suggestions and comments from worthy teachers would be gratefully received and duly acknowledged. I also wish to take the opportunity to express my gratitude to the staff of the Laxmi Publications for their splendid coordination.

—Author

To the Students of Class XI

The author wishes a bright and prosperous future to all the students. There is no denying the fact that hard work never goes waste. The students should develop the habit of devoting more and more time for their studies. Their seriousness in XI and XII classes is going to pave the way for their future career.

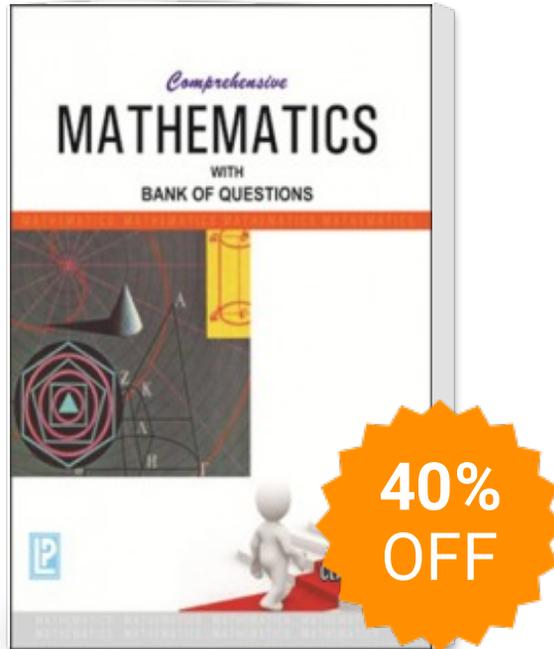
In all competitive examinations after XII class, the syllabii of both XI and XII classes are covered. It is a general practice that students of XI class do not bother for preparing their syllabus of XI class from the point of view of pattern of competitive examinations for entrance in engineering colleges. The best way is to prepare **multiple choice questions** with each and every chapter they study for their annual examination of XI class.

So for as **mathematics**, in particular is concerned, the students are advised to grasp the contents of the theory before attempting questions relating to various topics. In the first round, they may read the solutions of solved questions, but in the second round, they should try to solve the unsolved questions independently. In case, they get stuck at some point, only then they should consult the solution of solved questions.

The best way to learn mathematics is by '**reading and writing**' and not by '**reading**' only. The students are strongly advised to develop the habit of writing solutions. This practice will help them in reproducing the material in their examinations confidently.

In the last, the author once again wishes you all glittering success in your examinations.

Comprehensive Mathematics with Bank of Questions Class-XI



Publisher : Laxmi Publications ISBN : 9788131808139

Author : Parmanand Gupta

Type the URL : <http://www.kopykitab.com/product/3565>



Get this eBook