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<<离散数学及其应用>>

图书基本信息

书名：<<离散数学及其应用>>

13位ISBN编号：9787111313298

10位ISBN编号：7111313291

出版时间：2010-11-3

出版时间：机械工业出版社

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页数：441

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前言

PurposeThe original of Discrete Mathematics and its Applications is intended for one-term or two-termintroductory courses of Discrete Mathematics taken by students from wide variety of majors ,including computer science, mathematics, engineering and etc. It's an excellent textbook writtenby Prof. Kenneth H. Rosen and has been widely used in over 600 institutions around the world.The sixth edition gives a focused introduction to the primary themes of the Discrete Mathe-matics course and demonstrates the relevance and practicality of Discrete Mathematics to a widevariety of real-world applications. All the topics, examples, references and exercises are quitehelpful to the students.In recent years, bilingual teaching has been encouraged in universities and colleges in China.More and more Chinese instructors and students are getting interested in this book. However, asa textbook, over 800 original pages make Chinese students find it difficult to read. In order tointroduce this book to more Chinese college students, we tried to maintain the author's writingstyle and omitted some contents to adapt for the Chinese students' English reading ability. Thecompressed version fits into the syllabus of undergraduate course, and reduce students' readingburden as well.What is CompressedSince some contents in the original are taught in some other courses, such as Number theory,Discrete Probability, Induction and Recursion, Boolean Algebra and Finite-state Machine, weremoved them which were in the original book as Chapter 3, Chapter 4, Chapter 6, Chapter11 and Chapter 12. As a resuR, Logic and Proofs, Sets, Functions, Relations, Graphs, Trees,Counting and Advanced Counting Techniques are reserved in the compressed version.There are over 3800 exercises in the original textbook, posing various types of questions. Some of them are designed for basic skill development, some are in intermediate level and some are more difficult and challenging. In order to keep the original feature of the book, we removed the even-number questions of the remained Chapters, so that the questions with different difficul-ties are reserved. The historical information for the background of many topics is also removed,so as to reduce the reading burden of students.Some concepts are given in the exercises. It is difficult for students to comprehend becauseof the simplicity of the descriptions, such as the concepts about the Normal and Canonical formsfor a proposition. So we have added the detail description about them in Chapter 1.

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内容概要

《离散数学及其应用》一书是介绍离散数学理论和方法的经典教材，已经成为采用率最高的离散数学教材，仅在美国就被600多所高校用作教材。
并获得了极大的成功。
第6版在前5版的基础上做了大量的改进，使其成为更有效的教学工具。
本书基于该书第6版进行改编。
保留了国内离散数学课程涉及的基本内容。
更加适合作为国内高校计算机及相关专业本科生的离散数学课程教材。
本书的具体改编情况如下： 补充了第1章中的基础内容，详细描述了范式和标准型。
删去了在其他课程中讲授的内容。
如数论、离散概率、归纳和递归等。
对于保留章节，删去了编号为偶数的练习题。
删去了相关的历史资料。

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作者简介

作者：（美国）罗森（Kenneth H.Rosen）Kenneth H.Rosen密歇根大学数学学士。
麻省理工学院数学博士。
曾就职于科罗拉多大学、俄亥俄州立大学、缅因大学，后加盟贝尔实验室，现为AT&T实验室特别成员。
除本书外。
他还著有《初等数论及其应用》等书，并担任CRC离散数学丛书的主编。

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章节摘录

插图：25. Are these system specifications consistent？
"The system is in multiuser state if and only if it is operating normally. If the system is operating normally, the kernel is functioning. The kernel is not functioning or the system is in interrupt mode. If the system is not in multiuser state, then it is in interrupt mode. The system is not in interrupt mode."26. Are these system specifications consistent？
"The router can send packets to the edge system only if it supports the new address space. For the router to support the new address space it is necessary that the latest software release be installed. The router can send packets to the edge system if the latest software release is installed, The router does not support the new address space."27. What Boolean search would you use to look for Web pages about beaches in New Jersey？
What if you wanted to find Web pages about beaches on the isle of Jersey （in the English Channel）？
Exercises 28-29 relate to inhabitants of the island of knights and knaves created by Smullyan, where knights always tell the truth and knaves always lie. You encounter two people, A and B. Determine, if possible, what A and B are if they address you in the ways described. If you cannot determine what these two people are, can you draw any conclusions？
28. A says "At least one of us is a knave" and B says nothing.29. A says "We are both knaves" and B says nothing.
Exercises 30-32 are puzzles that can be solved by translating statements into logical expressions and reasoning from these expressions using truth tables.30. Steve would like to determine the relative salaries of three coworkers using two facts. First, he knows that if Fred is not the highest paid of the three, then Janice is. Second, he knows that if Janice is not the lowest paid, then Maggie is paid the most. Is it possible to determine the relative salaries of Fred, Maggie, and Janice from what Steve knows？
If so, who is paid the most and who the least？
Explain your reasoning.

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