
Book Review

Title : Operations Research (13th Edition, 2007)
ISBN : 81-8054-535-0, Pages 1006
Author : Prof. Kanti Swarup, P.K. Gupta, Man Mohan
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The 13th edition of the book titled "Operations Research" by Prof. Kanti Swarup, Dr. P K Gupta, and Dr. Man Mohan, is a very comprehensive coverage of the subject with particular emphasis on the solution of socio-economic problems arising in management sciences. Besides, the book caters to the needs of students of Mathematics, Statistics, Engineering, Economics, and Commerce. The additional topics introduced, viz., Investment Analysis, Network Routing problems, and Inventory Control will be able to satisfy students and practicing professionals interested in financial problems, building portfolio in stock market etc.

To begin with, the authors have provided a brief introduction of the topics such as the Linear Algebra with a view to develop the theoretical understanding of the readers for the topics presented later. This follows with a brief review of the historical development of Operations Research. A lucid explanation is provided for well known usage of O. R. viz. Operations Research as a tool for applied decision theory; as an art which gives bad answers to problems which otherwise could have worse answers; as a scientific approach to problem solving; etc. The students are encouraged to construct mathematical models for all problems which can be quantified. The mathematical models have been dealt with in great detail with sufficient clarity. Thereafter, the methodology of solving problems is explained.

To make a layman understand the concepts of linear programming problems, lots of graphical problems are discussed and gradually the student is introduced to the rigors of the Simplex Method. The Revised Simplex Method in Chapter 9 equips the readers for advanced techniques of Linear Programming. However, it would have been a better approach if the Primal and the Dual problems could have been explained in Canonical forms. Thus, instead

of finding redundancy in primal and dual variables afterwards, the problem could be explained better in canonical forms. The concepts of Post Optimality Analysis and Integer Programming are discussed in great details. Similarly, Goal Programming has been well explained.

The Transportation and Assignment problems along with Traveling Salesman problem give an insight to problems encountered in the marketing and sales environment. The book also gives a lucid description of topics on Sequencing problems, Probability and Markov Processes and Decision Analysis under uncertainty and under risk. Decision making in competitive situations or competing businesses are discussed under Theory of Games. Games with saddle points, having dominance properties and general $m \times n$ rectangular games are explained very well. Replacement problems both with and without price breaks have been introduced in a lucid manner. PERT/CPM have been explained well for Network Scheduling. The concepts of Non-linear programming, Geometric programming along with introduction to Information Theory are also explained.

In conclusion, this book along with lots of sample problems is most exhaustive and will be able to cater to the needs of students from a variety of disciplines including Management, Business Economics, and Financial Management, Mathematics, Statistics, Computer Science, etc. where Operations Research is part of their course curriculum.

*Reviewed by : Mrs. J.K. Arora
Ex-Reader, Department of Mathematics
Kamla Nehru College, University of Delhi
E-mail : jkarora44@yahoo.co.in*