

M.Sc APPLIED MATHEMATICS WITH COMPUTER APPLICATIONS
II SEMESTER

Paper-6: DATA STRUCTURES WITH PRACTICAL IN C++

11
~~12/26~~
12/26

- UNIT I: Arrays - Stack - Recursion
Arrays in C++ - Structures in C++ - Representing stacks in C++ - Infix, Postfix and Prefix - Recursion in C++ - Recursion programs.
ch. I, II & III (sections 3.1, 3.2 & 3.3 only)
- UNIT II: Queues and Lists
The Queues and its Sequential Representation - Linked Lists - Lists in C++ - Circular Lists - Doubly linked lists
ch. IV : (sec. 4.1 to 4.3 & 4.5 only)
- UNIT III: Trees
Binary trees - Binary tree representation - Representing lists as Binary trees - Trees and their applications
ch. V: (sec. 5.1, 5.2, 5.4 & 5.5 only)
- UNIT IV: Sorting and Searching
Bubble sort - Quick sort - Straight selection sort - Binary tree sorts - Heap sort - Basic search techniques
ch. VI: (sec. 6.1, 6.2 & 6.3 only)
ch. VII: (sec. 7.1 only)
- UNIT V: Graphs
Application of Graphs - C++ Representation of Graphs - Marshall's Algorithm - A shortest path algorithm
ch. VIII: (sec. 8.1 only)

TEXT BOOK

Data Structures using C - Aaron M.Tenenbaum, Yedidyah Langsam & Moshe J.Augenstein - Prentice Hall of India Private Limited, New Delhi.

REFERENCE BOOK

1. Theory and problems of Data Structures - Schaum's Outline Series
2. Data Structures, Data Abstraction, A Contemporary introduction using C++ - Mitchell I Model - Prentice Hall, Englewood Cliffs - New Jersey
3. Data Structures - A.V.Aho, J.E.Hopcroft & J.D.Ullman
4. Fundamentals of Data Structures in C++ Ellis Horowitz, Sartaj Sahri V.Dinesh Mehta, Galgotia