SEMESTER- II

COURSE CODE :- C 3
COURSE TITLE :- DATA STRUCTURE WITH C
CREDIT :- 4

Marks distribution
Full Marks: 15 (MSE) + 60 (ESE) = 75 Duration: 3 hrs Pass Marks: 34
This paper consists of 50 marks and divided into two groups:
Group-A: Objective questions (Compulsory) : 1 x 10 = 10
Group-B: descriptive questions (5 out of 8 questions) : 10 x 5 = 50

Total = 60

The questions must cover the entire syllabus with equal distribution of marks as far as practicable.

Module1: INTRODUCTION TO DATA STRUCTURES

Basic Concepts, Algorithms, Notations, Data Structure operations. Implementations of Data Structures, Mathematical Notations, Functions.

Module2: ARRAYSInsertion and deletion of element from an Array, Static Memory Allocation, searching

Module 3: STACK And Queue Implementation of Stack, Array-based Implementation.Applicationsof Stack.EvaluatingPostfix Expression, Simulating Recursive Function using Stack.

Module 4:QUEUE Queue Implementation, Array-based Implementation.

Module 5: LINKED LISTS Dynamic Allocation of Memory, Representation of Linked List. Implementation of Single Linked List, Insertion, deletion and traversing through single linked list. Implementation of Doubly Linked Lists, Insertion,deletion and traversing through Double linked list

Module 6: TREES Introduction to Trees, Binary Tree, Implementation of Binary tree, Binary Tree Traversal. Searching a Binary Tree,

Module 7: Binary search tree, Insertion, deletion and traversing through BST, Introduction to Threaded Binary Trees, AVL Tree.

Module 8: Searching and Sorting Linear or Sequential Search, Binary Search. Bubble sort, Selection sort, Insertion sort, Quick sort, Simple Merge sort, heap sort.

Books Recommended:

Data Structures – Lipschutz.
Data Structures through C-Y.P. Kanetkar.
Data Structure – Samanta

PRACTICAL: Data Structure with C
Data structure programming implementation covering entire syllabus