[April-18]

[EID-102]

B.Tech. Degree Examination

CSE & IT
II SEMESTER

DATA STRUCTURES WITH C

(Effective from the admitted batch 2015–16 onwards)

Time: 3 Hours **Max.Marks: 60**

Instructions: Each Module carries 12 marks.
Answer all modules choosing one question from each module.
All parts of the module must be answered in one place only.
Figures in the right hand margin indicate marks allotted.

MODULE-I

1. a) Differentiate between linear and non-linear data structure 6
   b) What is an array? Explain its operations 6

OR

2. a) What is a sparse matrix? Write a C program to add 2 sparse matrices 6
   b) Write a C program to demonstrate linear search 6

MODULE -II

3. a) Write the procedure for inserting and deleting a node in single linked list at a given position 6
   b) Explain the operations on Double linked list 6

OR

4. a) What is a linked list? Explain various types of linked list 6
   b) What is circular linked list? Explain its operations 6

MODULE -III

5. a) What is a stack? Explain the applications of stacks in detail 6
   b) How do you push and pop elements in a stack? Explain 6

OR

6. a) Explain array s-linked representation of Queue 6
   b) Write a program to demonstrate insertion and deletion operations on Queues 6

MODULE -IV

7. a) What is a graph? Explain the representation of graph in detail 6
   b) Explain about spanning trees in detail 6

OR

8. a) Write a C program to implement bubble sort algorithm 6
   b) Explain selection sort algorithm with example 6

MODULE -V

9. a) Construct the binary tree for the following 6

Inorder:	3	5	6	8	12	15	18	19
Preorder:	12	5	3	6	8	18	15	19

   b) What is traversal in binary tree? Explain with an example 6

OR

10. a) What is binary search tree? Explain its operations 6
    b) What is AVL Tree? Explain operations of AVL Tree 6

[3,7/II S/118]