OR

6. a) Discuss briefly about the representation of binary trees 6

   b) State and explain all binary tree traversals 6

UNIT-IV

7. Write a program for Quick Sort with an example. Show that the average case time complexity of Quick sort is O(nlogn) (6+6)

OR

8. a) Write a program for Binary search 4

   b) Discuss various types of Hashing Techniques 8

UNIT-V

9. What are all different types of graph representations? Explain each with example 12

OR

10. a) Write Prim's Algorithm to search an element in a Graph 10

    b) Specify the applications of Graphs 2

[3,7/III S/110]

[EURCS-304/EURIT-304]

B.Tech. DEGREE EXAMINATION

CSE & IT
III SEMESTER

DATA STRUCTURES

(Effective from the admitted batch 2007–08 onwards)

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

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

UNIT-I

1. a) What is a linked list? What are the different types of linked lists? Explain circular linked list with all the operations that can be performed on it 6

   b) Why a matrix is called sparse? Explain with an example 6

OR

2. a) What are linear lists? Write an algorithm which shows the operations on linear lists 6

   b) What are simulated pointers? Using them, write a program for DELETE and INSERT operations 6

UNIT-II

3. Write the array and linked list operations of stacks and operations on it. Mention the applications of stacks (5+5+2)

OR

4. Write the array and linked lists representation of Queues. Write Queues Applications (5+5+2)

UNIT-III

5. What is a Balanced Tree? List out and write the algorithms for rotations in AVL Trees 12

OR

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UNIT-IV

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