



MARRI LAXMAN REDDY INSTITUTE OF TECHNOLOGY AND MANAGEMENT

(AN AUTONOMOUS INSTITUTION)

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)

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I B.Tech II Sem Supply End Examination, March 2022

Data Structures

(CSC, CSD, CSE, CSI, CSM, ECE, INF, MECH)

Time: 3 Hours.**Max. Marks: 70**

Note: 1. Answer any FIVE questions.

2. Each question carries 14 marks and may have a, b as sub questions.

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| 1 | a) List and explain operations on Data Structures. | 7M | C01 | BL4 |
| | b) Explain representation of Linked list in detail. | 7M | C01 | BL4 |
| 2 | a) Give an algorithm for the deletion operation on doubly linked list. | 7M | C01 | BL1 |
| | b) Write an algorithm to perform the insertion operations in a circular linked list. | 7M | C01 | BL3 |
| 3 | a) Explain representation of Queues using Arrays. | 7M | C02 | BL4 |
| | b) Describe in brief applications of stack. | 7M | C02 | BL2 |
| 4 | a) Define stack. Explain different operations performed on stack. | 7M | C02 | BL4 |
| | b) Explain an algorithm for Quick Sort. | 7M | C03 | BL4 |
| 5 | a) Describe divide and conquer technique is implemented in binary search. | 7M | C03 | BL2 |
| | b) Classify the different sorting methods with examples. | 7M | C03 | BL2 |
| 6 | a) Given In order traversal of a binary tree is D,G,B,E,A,H,F,I,C and pre order traversal is A,B,D,G,E,C,F,H,I construct the binary tree. | 7M | C04 | BL6 |
| | b) Discuss the different traversal technique in binary tree with suitable examples. | 7M | C04 | BL2 |
| 7 | a) Construct the binary search tree for 150, 80, 40,30,10, 70, 110, 20, 90, 60, 50, 140,130 | 7M | C04 | BL6 |
| | b) Discuss an algorithm for Depth First Search on a graph. | 7M | C05 | BL2 |
| 8 | a) Explain different ways representation of graphs. | 7M | C05 | BL4 |
| | b) Define minimum spanning tree. Give an example. | 7M | C05 | BL1 |