Course Code: 1930511 **Roll No:** **MLRS- R19**

MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
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II B.Tech I Sem Supply End Examination, October 2021

DATA STRUCTURES

(CSE & IT)

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.

1	a)	Write an algorithm to insert an element into a doubly linked list.	7M	CO1	L2
	b)	Describe the array implementation of stack ADT	7M	CO2	L2
2		Write an algorithm to construct queue using stack.	14M	CO1	L2
3	a)	What is the functionality of hash table and explain the representation of hash table with an example.	7M	CO4	L2
	b)	Define Collision and describe rehashing and double hashing collision resolution techniques	7M	CO4	L1&L2
4		What is the purpose of Red-Black tree and construct the Red Black tree for the following data 38,40,50,32,56,76,14,7,48	14M	CO4	L3
5	a)	What is the purpose of skip list data structure and explain the operations performed on skip list with an example.	7M	CO2	L2
	b)	Define Splaying , compare and contrast splay tree with AVL tree	7M	CO4	L1 & L2
6		Define external sorting and also explain external sorting using merge sort with an example.	14M	CO3	L1 & L2
7	a)	Describe the representation methods of graph.	7M	CO4	L2
	b)	What is Trie and discuss standard tries and compressed tries.	7M	CO3	L1
8		Explain Boyer-Moore algorithm with an example.	14M	CO3	L2

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