Time:2Hrs **Maximum Marks: 30**

Qn. No.	PART – A Answer all questions	Marks	BL	CO
1	Compare Linear and Nonlinear data structure.	3	L1	1
2	Describe a procedure for stack operations using array.	3	L1	1
3	Illustrate binary search tree and its properties.	3	L2	1
4	Show that amortized cost of stack operation using accounting method.	3	L2	1
5	Discuss about disjoint set data structure in detail.	3	L1	1
6	List and explain various rotations in height balance tree.	3	L1	2
7	Illustrate and explain red black tree properties.	3	L1	2
8	Create a B-Tree of order 3 from the following list of data item 30,20,35,95,15,60,55,25,5,65,70.	3	L2	2
9	Discuss about the procedure for split operation in B-tree insertion.	3	L2	2
10	List the steps for inserting the data item into a Red black tree.	3	L2	2
	PART – B			
	MODULE-1			
11 a.	Explain the insertion operation (Beginning & Mid) for singly linked list & doubly linked list with an example. OR	5	L1	1
b.	Compare Aggregate and potential method in amortized analysis with an example	5	L1	1
	MODULE-1			
12 a.	Explain about hashing technique and how it resolves collision with an example 0r	5	L2	1
b.	Discuss the procedure for insertion in binary search tree	5	L2	1
	MODULE-2			
13 a.	Explain the procedure for **DELETION** and **FIX_UP** for Red-Black tree Or	5	L2	2
	Show the Red black tree that results from the successive deletion of the keys in the order 8,12,19,31,38,41 using the following diagram	5	L3	2

Name of Student: .....

14 a	Explain about the deletion operation in B-Tree in detail	5	L2	2
	0r			
b)	Perform deletion operation for the following B-Tree. Delete b, m, n, e, c	5	L3	2