Seat No Emonitent No.	Seat No.:	Enrolment No.
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GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III(New) EXAMINATION - SUMMER 2016

Subject Code:2130702 Date:09		09/06/2016	
Subje	ct l	Name:Data Structure	
_			l Marks: 70
Instruc			11/14/14/15
		Attempt all questions.	
		Make suitable assumptions wherever necessary.	
		Figures to the right indicate full marks.	
			MARKS
Q.1		Short Questions	14
۷.1	1		
	2	1	
	3		rst
		case?	
	4	List the applications of Stack.	
	5	* *	
	6	6 1	
	7		
	8	11	
	9	•	
	10	Describe the time complexity of Binary search algorithm.	
	11		
	12	Write 'C' structure of Binary tree.	
	13	<u> </u>	
	14		
Q.2	(a	Write an algorithm for simple queue with ENQUEUE operations.	03
	(b		04
	(c)		07
		OR	
	(c)	Write a program to implement circular queue using array.	07
Q.3	(\mathbf{a})		03
		(a) 9 3 4 * 8 + 4/- (b) 5 6 $2 + * 1 2 4/- +$	
	(b	Explain the concept of circular queue. Compare circular queue with	ith 04
		simple queue.	
	(\mathbf{c})	÷	ole 07
		examples.	
0.0	,	OR	0.2
Q.3	(a)		03
	(b	· •	nd 04
	(-)	TRAVERSE operations in doubly linked list.	1 0 7
	(c)	· · · · · · · · · · · · · · · · · · ·	ral 07
0.4	(0	tree into a binary tree.	03
Q.4	(a)	• •	
	(b) (c)	·	04 ep 07
	(0)	with an example.	Cp U/
		OR	
Q.4	(a		03
~. -	(a ₁		04
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	(c)	Write an algorithm for Insertion sort method. Explain each step with an example.	07
Q.5	(a)	Explain Breadth First Search in graphs with an example.	03
	(b)	Construct a binary tree from the traversals given below: Inorder: 1 3 4 6 7 8 10 13 14	04
		Preorder: 8 3 1 6 4 7 10 14 13	
	(c)	Explain various Hash collision resolution techniques with examples.	07
		OR	
Q.5	(a)	Explain Sequential file organizations and list its advantages and disadvantages.	03
	(b)	Draw a Binary expression tree for the following and perform preorder traversal: $(A \ B \ C) + (D - E \ F)$	04
	(c)	Write Prim's algorithm for minimum spanning tree with an example.	07
