## **C.U.SHAH UNIVERSITY Summer Examination-2019**

## Subject Name: Introduction to Algorithms & Data Structure

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	Subject	Code: 4CS04BDS1/4CS04IDS1	Branch: B.C.A./B.Sc. I.T.	
	Semester	r: 4 Date : 18/04/2019	Time : 02:30 To 05:30	Marks: 70
	Instructio (1) U (2) I (3) I (4) A	ons: Use of Programmable calculator & a Instructions written on main answer l Draw neat diagrams and figures (if ne Assume suitable data if needed.	ny other electronic instrument is pro book are strictly to be obeyed. ecessary) at right places.	hibited.
Q-1 Atte	a) b) c) d) e) f) g) h) i) j) k) l) m) m) m) mpt any f	(14)		
Q-2 Q-3	(a) (b) (c) (a) (b) (c)	Attempt all questions Discuss various characteristic of al Discuss selection control mechanis Discuss ceil and floor functions Attempt all questions Discuss types of function with suit Explain divide and conquer method Discuss various tools for writing a	lgorithm sm cable figure dology an algorithm	(5) (5) (4) (5) (5) (4)
Q-4	(a) (b) (c)	Attempt all questions Explain strongly connected compo Discuss push and pop operations of Write a note on: Linked list	nents with example of stack	(5) (5) (4) Page 1 of 2



Q-5		Attempt all questions	
	<b>(a)</b>	Explain DQueue with insert operation	(5)
	<b>(b)</b>	Discuss Prim's algorithm	(5)
	(c)	Define the terms: Root, Sibling, Node and Leaf	(4)
Q-6		Attempt all questions	
	<b>(a)</b>	Discuss merge sort with algorithm	(5)
	<b>(b)</b>	Explain depth first search with algorithm	(5)
	(c)	Write a note on: queue	(4)
Q-7		Attempt all questions	
	(a)	Explain binary search tree with suitable example	(5)
	<b>(b)</b>	Describe efficiency of an algorithm	(5)
	(c)	Write a note on: hash table	(4)
Q-8		Attempt all questions	
-	(a)	Write a java code for binary search	(5)
	<b>(b)</b>	Write a note on: Recursion	(5)
	(c)	Write a preorder and postorder traversal of the following tree	(4)



