

Enrollment No: \_\_\_\_\_

Exam Seat No: \_\_\_\_\_

# C.U.SHAH UNIVERSITY

## Winter Examination-2019

**Subject Name : Data Structure Using C**

**Subject Code : 4CS04DSC1**

**Branch: M.Sc. C.A. & I.T. (Integrated)**

**Semester : 4**

**Date : 17/09/2019**

**Time : 02:30 To 05:30**

**Marks : 70**

Instructions:

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at right places.
  - (4) Assume suitable data if needed.
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<b>Q-1</b>	<b>Attempt the following questions:</b>	<b>(14)</b>
	a) Give gull form of UDF.	1
	b) Define Array.	1
	c) What is sorting?	1
	d) Define Data.	1
	e) Define Structure.	1
	f) Define Search.	1
	g) What is Algorithm?	1
	h) Define Pointer.	1
	i) Define Function.	1
	j) Write the applications of stack.	2
	k) Write the applications of queue.	2
	l) What is tree?	1

**Attempt any four questions from Q-2 to Q-8**

<b>Q-2</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Explain malloc() and calloc() with examples.	7
<b>B</b>	Explain singly linked list with example.	7
<b>Q-3</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Write an algorithm to check whether the number is prime or not.	7
<b>B</b>	Explain Bubble sort with example.	7
<b>Q-4</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Write a note on Space and Time complexity of Algorithm.	7
<b>B</b>	Explain various tree traversals with examples.	7



<b>Q-5</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Explain various types of Array with examples.	<b>7</b>
<b>B</b>	Write a note on Pointers.	<b>7</b>
<b>Q-6</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	What is Stack? Explain stack operations with examples.	<b>7</b>
<b>B</b>	What is Queue? Explain queue operations with examples.	<b>7</b>
<b>Q-7</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Explain Big-O notation.	<b>7</b>
<b>B</b>	Explain primitive and non-primitive data structures.	<b>7</b>
<b>Q-8</b>	<b>Attempt all questions</b>	<b>(14)</b>
<b>A</b>	Explain Doubly linked list with example.	<b>7</b>
<b>B</b>	Write a note on Circular queue.	<b>7</b>

