Enrollment No: _____ Exam Seat No:_____

C.U.SHAH UNIVERSITY

Summer Examination-2019

Subject Name : Advanced C and Data Structure

Subject Code : 4CS02IDS2 **Branch:** B.Sc.I.T.

Semester : 2 **Date : 30/04/2019** **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.

Q-1 **Attempt the following questions:** **(14)**

a) String ends with____ character in C
b) The function with no return type is declare as _____
c) The full form of DMA is_____
d) ____ is a variable that can hold the memory address of another variable
e) Define the term: array
f) Which function reallocates the memory?
g) Define the term: Algorithm
h) What is leaf node in tree?
i) Process of removing element from stack is called as _____ (push/pop/peek/All)
j) A Queue is a _____ (LIFO/FIFO/LOFI/FILO)
k) What is sorting?
l) What is root node in tree?
m) Which of the following is an example of nonlinear data structure?
1 Stack 2 Queue 3 Tree 4 Array
n) Which header file must be included to use dynamic memory allocation functions
1 stdio.h 2 stdlib.h 3 dos.h 4 math.h)

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

Q-2 **Attempt all questions**

a) Discuss call by value with suitable example **(5)**
b) Explain passing array as parameter **(5)**
c) Discuss various applications of array **(4)**

Q-3 **Attempt all questions**

a) Explain malloc with syntax and example **(5)**
b) Describe pointer passing to function with example **(5)**
c) Explain pointer initialization and declaration **(4)**

Q-4 **Attempt all questions**

a) Explain bubble sort with algorithm **(5)**
b) Discuss linear search with algorithm **(5)**

	c)	Discuss various characteristics of algorithm	**(4)**
Q-5		**Attempt all questions**	
	a)	Discuss selection sort with algorithm	**(5)**
	b)	Describe stack operations	**(5)**
	c)	Discuss advantages and disadvantages of pointer	**(4)**
Q-6		**Attempt all questions**	
	a)	Explain binary search with suitable programming logic	**(5)**
	b)	Discuss insert operation of a queue with programming logic	**(5)**
	c)	Explain circular queue	**(4)**
Q-7		**Attempt all questions**	
	a)	Explain binary tree	**(5)**
	b)	Describe DQueue with suitable diagram	**(5)**
	c)	Explain insertion and deletion of a node in singly linked list	**(4)**
Q-8		**Attempt all questions**	
	a)	Write a C program of Stack with any one operation	**(5)**
	b)	Write a program to display sum of array elements using pointer	**(5)**
	c)	Write a program to input array elements and display minimum from them.	**(4)**