Exam Seat No:_____ **Enrollment No:_____**

C.U.SHAH UNIVERSITY

WADHWAN CITY

University (Winter) Examination -2013

Course Name :MSc(I.T) Sem--I **Subject Name: -Advanced Procedural Language & Data Concept**

Duration :- 2:30 Hours **Date : 27/12/2013**

Instructions:-

(1) Attempt all Questions of both sections in same answer book / Supplementary.
(2) Use of Programmable calculator & any other electronic instrument is prohibited.
(3) Instructions written on main answer Book are strictly to be obeyed.
(4) Draw neat diagrams & figures (If necessary) at right places.
(5) Assume suitable & Perfect data if needed.

SECTION-I

Q.1 **Answer the following questions:**

(a) List the various features of C. [02]

(b) What is a token in C? List various types of tokens available in C with example? [02]

(c) What is command line argument? Explain with one example. [02]

(d) What is sizeof(NULL) in C? [01]

Q.2 (a) What is recursion? Write a C program to evaluate the following series using recursive function calls. $f(X)= X – X^3/3! + X^5/5! – X^7/7! + \ldots\ldots$ [05]

(b) Explain break statement and continue statement with example. [05]

(c) What is the difference between [04]

(i) (*m)[5] and *m[5]

(ii) malloc() and calloc()

OR

Q.2 (a) Write a function using pointers to add two matrices and to return the resultant matrix to the calling function in C. [05]

(b) Give the difference between structure and union with example. [05]

(c) What is a pointer in C? List out the various benefits of pointers in C. [04]

Q.3 (a) Explain entry-controlled loop and exit-controlled loops in C with example. [07]

(b) What do you mean by scope, visibility and lifetime of variables? Explain different variable storage classes available in C. By default which storage class is used for the declaration of a variable inside the function? [07]

OR

Q.3 (a) Design a structure Student_Marks to contain marks of three different subjects and total marks. Write a C program to calculate the subject-wise and student-wise totals and store them as a part of the structure. [07]

(b) Explain Call by value and Call by reference with on example in C. [07]

SECTION-II

Q.4 Answer the following questions:

(a) What is Data Structure? Explain primitive and non-primitive data structure with example. [03]

(b) Write a short note on Priority queue. [03]

(c) What do you mean by LIFO and FIFO? [01]

Q.5	(a)	Write an algorithm for PUSH, POP and PEEP operations on stack.	[05]
	(b)	Explain selection sort with an example. Give the procedure for the Selection Sort.	[05]
	(c)	Give the advantages and disadvantages of Linked List over an Array.	[04]

OR

Q.5	(a)	Give the algorithm of infix to postfix conversion. Convert "A+(B*C-(D/E-F)*G)*H" into postfix notation.	[05]
	(b)	Write an algorithm for Double Ended Queue that (i) inserts an element at *front* end and (ii) deletes an element from front end.	[05]
	(c)	What is singly linked list and doubly linked list? Give the difference between singly linked list and doubly linked list.	[04]
Q.6	(a)	What is circular queue? Write a C program to Insert and Delete on Circular Queue using an array representation of queue.	[07]
	(b)	Explain Merge sort with example. Also write down the procedure for the merge sort.	[07]

OR

Q.6	(a)	Write a C program to find maximum element from doubly linked list.	[07]
	(b)	Explain Bubble sort with example. Write a C program for the Bubble sort.	[07]

*********27**********