KONGU ENGINEERING COLLEGE, PERUNDURAI, ERODE- 638 060
EVEN SEMESTER 2018-19
CONTINUOUS ASSESSMENT TEST I – MARCH2019
Regulation 2018

Roll number

Programme : B.E/B.Tech Branch : Common To CSE, IT Semester : I	Date : 15.03.2019 Time : 9.30 am – 12.30 pm
Code : 18CSC21 Subject : Programming and Linear Data Structures	Duration : 3 hrs Maximum Marks : 100

PART –A (10× 2 =20 marks)
(ANSWER ALL QUESTIONS)

1.	List any four benefits of pointers.	CO1	K1

2.	Trace the output of the following code snippet.
	`void main()`
	`{`
	`int *ptr,x;`
	`ptr = &x;`
	`*ptr = 0;`
	`*ptr+=5;`
	`printf("%d %d" , x, *ptr);`
	`}`
		CO1	K2

3.	Write a program to print the values of variables of different data types using a single pointer.	CO1	K3

4.	Predict the output for the following code snippet.
	`void main()`
	`{`
	`int arr[]={10,20,30,40,50,60};`
	`int *ptr;`
	`for(ptr=&arr[0]; ptr<=&arr[4];ptr++)`
	`{`
	`printf("%d", *ptr);`
	`}`
	`}`
		CO1	K2

5.	Distinguish between malloc() and calloc() functions in C.	CO1	K2
6.	List the rules for defining a function pointer.	CO2	K1
7.	What are the various ways to access the members of the structure?	CO1	K2
8.	Declare a nested structure to store your personal details.	CO2	K2

9.	Trace the output of the following code snippet.
	`#include <stdio.h>`
	`void main()`
	`{`
	`int *a;`
	`float b;`
	`a= &b;`
	`printf("%f" , *a);`
	`}`
		CO1	K2

10.	Predict the output.
	#include <stdio.h>
	#include <string.h>
	void main()
	{
	char a[] = "KEC";
	printf("%d \n", sizeof(a));
	printf("%d ", strlen(a));
	}
			CO1	K2

PART –B (5 × 12 =60 marks)
(ANSWER ALL QUESTIONS)

11.	(a)	Nokia stored its mobile prices in a one-dimensional array. Implement the following using pointers: i. Sort the prices of the mobile phone highest to lowest. ii. Find the price of the cheap and expensive mobile. iii. Nokia has introduced new mobile with price of Rs.25,000. Insert this price in appropriate place in the sorted array.	(12)	CO1	K3
		(or)			
11.	(b)	You are given two lists of register numbers. One list consists of Register numbers of all the students in a class(Arranged in ascending order) and other list consists of students who have passed in the End semester exam. Find the list of students who failed in the End semester exam.	(12)	CO1	K3
12.	(a)	Develop two functions to add and subtract two matrices of order nxn. These functions should take two matrices as arguments and return the resultant matrix.	(12)	CO1	K3
		(or)			
12.	(b)	Write a C program to find the transpose of a given matrix. Pass the matrix as an argument to the function. Resultant matrix should be stored in the same matrix itself.	(12)	CO1	K3
13.	(a)	Given a string Jet="IAF Mirage-2000" and string WingCommander = "AbhinandanVarthaman". Implement the following operations using user defined functions and pointers: i. Concatenate the above two strings and store it in a string SurgicalStrike. ii. Count number of non alphabetical characters in the string Jet. iii. Replace the character '-' with '*' in the string Jet.	(12)	CO1	K3
		(or)			
13	(b)	You are given the list of names of the students of your class. Perform the following functions: i. Sort the names in alphabetical order ii. Find the position of your name in the sorted list.	(12)	CO1	K3
14.	(a)	You are given a list of cut-off marks of the students for engineering admission. Allocate memory dynamically for storing the list of marks.	(12)	CO1	K3

		Implement the following operations: a. Average cut-off mark b. Find the minimum cut-off mark c. Find the maximum cut-off mark d. Find number of students having their cut-off above 190.			
		(or)			
14.	(b)	You are given a list of roll numbers of 60 students in random order and that list can accommodate only 60 students. 'N' students are newly admitted in the class. Reallocate memory for the same list to accommodate the new roll numbers. Display the roll numbers in sorted order.	(12)	CO1	K3
15.	(a)	Create the structure to maintain employee details like EmpID,Name,Date of Joining, BasicPay, DA, HRA, Deductions and Total salary. Get the details for N employees. Calculate total salary for each employee and display the details in tabular format.	(12)	CO2	K3
		(or)			
15.	(b)	Using structure, perform subtraction of two complex numbers.	(12)	CO2	K3

PART –C (1 × 20 = 20 marks)

16.	(a)	Create the structure to store the details of books in library such as ISBN No., Title, Price, Author, Publisher etc. N different books are available in the library. Perform the following operations: i. Display the details of books in the library based on the order of its title. ii. Search whether the given title of the book is available in the library or not. If available, display the details of the book.	(20)	CO2	K3
		(or)			
16.	(b)	Create a structure called BANK with acc.No, balance, name as structure members for a customer. Perform the following operations by passing structure pointer as function arguments i. Deposit() ii. Withdraw() iii. Display()	(20)	CO2	K3

Bloom's Taxonomy Level	Remembering (K1)	Understanding (K2)	Applying (K3)	Analysing (K4)	Evaluating (K5)	Creating (K6)
Percentage	2	8	90	-	-	-