Sub Code:ECS101

Paper Id: 110103 Roll No:

B. TECH
(SEM-I) THEORY EXAMINATION 2019-20
COMPUTER SYSTEM & PROGRAMMING IN C

Time: 3 Hours *Total Marks: 100*

Note: 1. Attempt all Sections. If required any missing data then choose suitably.

SECTION A

1. Attempt all questions in brief. **2 x 10= 20**

a. Define keyword.
b. What are different types of constants?
c. Write macro to compute cube of a number.
d. Explain default in switch statement.
e. What are the merits and demerits of array?
f. Differentiate between GUI and CUI.
g. Evaluate the expression a&b when a = 121 and b = -15
h. Write the difference structures and union.
i. Draw flowchart to check number is positive, negative or equal to zero.
j. Explain the indirection operator.

SECTION B

2. Attempt any *three* of the following: **10x3=30**

a. Define function. Write the advantages of using function. Explain the classification of functions.
b. Define the switch statement. Also write the characteristics of switch statement. Write a meu driven program to simulate the calculator.
c. Explain different types of loop statements in C. Write a program in C to find the sum of the following series upto n terms

$$\frac{1}{1!}+\frac{2}{2!}+\frac{3}{3!}+\ldots\ldots\ldots$$

d. What are advantages and disadvantages flow chart over algorithm. Draw a flowchart to display all prime numbers between 1 to n.
e. Explain the limitation of arrays. Write a program in C to find the 2 nd largest element in the array.

SECTION C

3. Attempt any *one* part of the following: **10x1=10**

a. Explain types and functions of operating system. Explain the feature of UNIX operating system.
b. Explain the block diagram of digital computer. Write the difference syntax and logical error.

4. Attempt any *one* part of the following: **10x1=10**

a. Define data type in C language. What are different types of data types in C. Explain primitive data type with their format specifier, size in bytes and range.
b. Explain the relational, logical and bitwise operator in C language. Describe the operator precedence and associativity with suitable example.

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5. Attempt any *one* part of the following: 10x1=10

a. Explain the different way to initialize the 2-D array. WAP in C to subtract two matrices.

b. Explain C preprocessor directive in detail. Write the difference between typedef and macro.

6. Attempt any *one* part of the following: 10x1=10

a. Write the difference between malloc() and calloc() memory dynamic memory allocation function.WAP to create an array using dynamic memory allocation function. Also sort the same array.

b. Explain various file opening modes in C language. WAP to check the equality of two files.

7. Attempt any *one* part of the following: 10x1=10

a. Explain the different ways to input the strings in C language. WAP to copy the content of one string onto another string without using library function strcpy().

b. Write the difference between while and for loop. WAP to compute the sum of all Armstrong numbersbetween 100 and 999.