Sub Code:KCS101

Paper Id: 110111 Roll No: | | | | | | | | | | | | | |

B. TECH.
(SEM-I) THEORY EXAMINATION 2019-20
PROGRAMMING FOR PROBLEM SOLVING

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

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

Qno.	Question	Marks	CO
a.	Name different storage class with one example of each.	2	CO1
b.	Describe the functionalities of operating system.	2	CO1
c.	Differentiate between implicit & Explicit type conversion.	2	CO2
d.	What do you understand by mixed operands? Explain with example.	2	CO2
e.	What is the meaning of prototype of a function?	2	CO3
f.	Differentiate between while and do-while loop.	2	CO3
g.	Write an algorithm to find second largest element in an array.	2	CO4
h.	Differentiate structure with union.	2	CO4
i.	Explain the role of C preprocessor.	2	CO5
j.	What do you mean by pointer arithmetic?	2	CO5

SECTION B

2. Attempt any *three* of the following: **3 x 10 = 30**

Qno.	Question	Marks	CO
a.	Discuss the major components of a digital computer with suitable block diagram. Also discuss the function of each component.	10	CO1
b.	What are operators? Mention different types of operators in C. Explain the difference between operator precedence and associativity with suitable example.	10	CO2
c.	Take the three digit number from the user then write a program to check entered number is palindrome or not.	10	CO3
d.	Write a program that prints the real roots of a quadratic equation. Also draw flowchart for the same.	10	CO4
e.	Write macro definition with arguments for calculation of simple interest and amount. Store these macro definitions in a file called 'interest.h'. Include this file in your program and use the macro definitions for calculating simple interest and amount.	10	CO5

SECTION C

3. Attempt any *one* part of the following: **1 x 10 = 10**

Qno.	Question	Marks	CO
a.	Differentiate between: (i) Compiler and Interpreter (ii) Linker and Loader (iii) break and continue	10	CO1
b.	(i) Define data types in C. Discuss primitive data types in terms of memory size, format specifier and range. (ii) Explain structure of a C program.	10	CO1

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4. Attempt any *one* part of the following: 1 x 10 = 10

Qno.	Question	Marks	CO
a.	What are different conditional statements in C programming? Explain with proper example of each.	10	CO2
b.	if three sides of triangle are input through keyboard, draw a flowchart to check whether a triangle is isosceles, equilateral, scalene or right-angled triangle.Also write a program in C for the same.	10	CO2

5. Attempt any *one* part of the following: 1 x 10 = 10

Qno.	Question	Marks	CO
a.	(i) Write a program in C to generate the Fibonacci series up to the last Fibonacci number less than 100. Also finds the sum of all Fibonacci numbers and total count of all Fibonacci numbers. (ii) Write a program in C to print the following pattern: 2 3 4 5 6 7 3 4 5 6 7 4 5 6 7 5 6 7 6 7 7	6 4	CO3
b.	Differentiate between call by value and call by reference. Write a program in C that computes the area and circumference of a circle with radius taken as input using call by reference in functions.	10	CO3

6. Attempt any *one* part of the following: 1 x 10 = 10

Qno.	Question	Marks	CO
a.	What do you mean by sorting? Write a program in C to sort 'n' positive integers using bubble sort. Also draw the flow chart for the same.	10	CO4
b.	Create a suitable structure in C language for keeping the records of the employees of an organization about their code, Name, Designation, Salary, Department, City of posting. Also write a program in C to enter the records of 100 employees and displays the name of those who earn more than 20,000.	10	CO4

7. Attempt any *one* part of the following: 1 x 10 = 10

Qno.	Question	Marks	CO
a.	What are different file opening modes? Write a program in C that reads a series of integer numbers from a file named INPUT and write all odd numbers to a file to be called ODD and all even numbers to a file to be called EVEN.	10	CO5
b.	State the features of a pointer. Explain dynamic memory allocation with the help of an example.	10	CO5