U.S.N.										

B.M.S. College of Engineering, Bengaluru-560019

Autonomous Institute Affiliated to VTU

December 2023 Supplementary Examinations

Programme: B.E
Branch: Common to all Branches
Course Code: 21CC1ESPSP /21CC2ESPSP
Course: Problem Solving through Programming

Semester: I / II
Duration: 3 hrs.
Max Marks: 100

Instructions: 1. Answer any FIVE full questions, choosing one full question from each unit.
2. Missing data, if any, may be suitably assumed.

UNIT - I

1	a)	Differentiate between Input devices and output devices explain any one output device.	**06**
	b)	What is an algorithm. Write an algorithm to swap two numbers without using temporary variable.	**06**
	c)	Illustrate the need for type conversion and explain the different types of conversion with an example.	**08**

UNIT - II

2	a)	Write a program to print the following pattern: 1 3 5 7 9 3 5 7 9 5 7 9 7 9 9	**06**
	b)	Write a program to find if a given number is a palindrome or not.	**08**
	c)	Write a program to read the numbers until -1 is encountered. Also calculate the sum and mean of all positive numbers entered and the sum and mean of all negative numbers entered separately.	**06**

OR

3	a)	Write a program to calculate the roots of a quadratic equation without using switch.	**08**
	b)	Write a C program to find diameter, circumference and area of circle, compute the values only when the radius is greater than 3 otherwise print an error statement that the values cannot be computed	**06**
	c)	Write a program to enter a number and then calculate the sum of its digits.	**06**

UNIT - III

4	a)	Write a Program to transpose a 3 * 3 matrix.	**08**
	b)	Write a program to compare two strings without using built in function.	**06**
	c)	Write a program to interchange the largest and the smallest number in the array	**06**

OR

5	a)	Write a program to concatenate two strings without using built in functions	**06**
	b)	Write C program to sort N integer numbers in ascending order using selection sort. Accept N and array elements from user.	**08**
	c)	Write a C Program to search for an element in an N array using Binary search.	**06**

UNIT - IV

6	a)	Write a program to calculate GCD using recursive functions.	**06**
	b)	Write a program to sum the series $1/1! + 1/2! + 1/3! +\ldots\ldots+1/n!$ using functions.	**06**
	c)	Write a program to find biggest of three integers using functions	**08**

UNIT - V

7	a)	Write C Program to add two complex numbers by passing structure to a function.	**08**
	b)	Write a program to find mean of n numbers using arrays and pointers	**06**
	c)	What is Preprocessor directives and explain different types of preprocessor directives	**06**

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