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

Autonomous Institute Affiliated to VTU

## May 2023 Semester End Main Examinations

**Programme: B.E**

**Semester: I / II**

**Branch: Common to all Branches**

**Duration: 3 hrs.**

**Course Code: 21CC1ESPSP / 21CC2ESPSP**

**Max Marks: 100**

**Course: Problem-Solving through Programming**

**Date: 25.05.2023**

**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) Write a C program to convert specified days into years, weeks and days.	08
	b) Write a C program that accepts an employee's ID, total worked hours of a month and the amount he received per hour. Print the employee's ID and salary (with two decimal places) of a particular month.	08
	c) What are identifiers? List out rules to write identifiers	04

### UNIT - II

2	a) Write a C program to find the eligibility of admission for a professional course based on the following criteria: Eligibility Criteria : Marks in Maths $\geq 65$ and Marks in Phy $\geq 55$ and Marks in Chem $\geq 50$ and Total in all three subject $\geq 190$ or Total in Maths and Physics $\geq 140$	08
	b) Write a C program to read temperature in centigrade and display a suitable message according to temperature state below : Temp $< 0$ then Freezing weather Temp 0-10 then Very Cold weather Temp 10-20 then Cold weather Temp 20-30 then Normal in Temp Temp 30-40 then Its Hot Temp $\geq 40$ then Its Very Hot	08
	c) Differentiate while and do-while with example	04

### OR

3	a) List out the differences between break; and continue;	04
	b) Write a program in C to display the n terms of harmonic series and their sum. $1 + 1/2 + 1/3 + 1/4 + 1/5 \dots 1/n$ terms	08
	c) Write a program in C to display first n odd natural number and their sum	08

**Important Note:** Completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages. Revealing of identification, appeal to evaluator will be treated as malpractice.

### **UNIT - III**

4 a) Write a C program to sort a list of elements using the bubble sort algorithm. **10**  
b) Write a program to search an element using binary search assuming a sorted input **10**

### **OR**

5 a) Write a program in C to print the string in reverse order. **10**  
b) Write a program in C to count total number of vowel or consonant in a string. **10**

### **UNIT - IV**

6 a) Write a program in C to get the largest element of an array using the function. **10**  
b) Write a program in C to find the sum of digits of a number using recursion. **10**

### **UNIT - V**

7 a) Write a C program to read two employee details like Name, Employee ID and Salary using structures and print the details of the employee getting highest salary. **10**  
b) Write a program in C to swap elements using call by reference. **10**

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