

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

Autonomous Institute Affiliated to VTU

May 2023 Semester End Main 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

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: **08**
Eligibility Criteria : Marks in Maths ≥ 65 and Marks in Phy ≥ 55 and Marks in Chem ≥ 50 and Total in all three subject ≥ 190 or Total in Maths and Physics ≥ 140
- b) Write a C program to read temperature in centigrade and display a suitable message according to temperature state below : **08**
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 ≥ 40 then Its Very Hot
- 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. **08**
 $1 + 1/2 + 1/3 + 1/4 + 1/5 \dots 1/n$ terms
- 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**
