Central University of Haryana
Term End Examination JUNE 2023

Programme: B.Tech.(CSE)
Course Code: BT CSE 104A
Course Title: Programming for Problem Solving

Max Time: 03 hrs.
Max Marks: 70

Instructions:
Question Number **one (PART-I)** is compulsory and carries total 14 marks (Each sub Question carries two Marks).
Question Numbers 2(two) to 5(five) carry fourteen marks each with internal choice.

PART -I

Q. No.1
a) List and explain the functions of various parts of computer software.
b) Define Algorithm and State Properties of it?
c) What is the general structure of the 'C' program and explain with an example?
d) Discuss the relationship between String and Array through relevant examples.
e) How to define the Structure and Array of Structure in C?
f) What is the idea behind the linked list? What are key components of a linked list?
g) What are the types of complexity analysis? Write the notion of order of complexity through an example.

PART –II

Q. No.2
a) What is Flowchart? Explain the Symbols used in a Flowchart ? (07 marks)
b) In how many parts the main memory is logically divided? Explain how various variables are allocated in each of them with a suitable example? (07 marks)

OR

Q. No.2
a) What are the types of errors in C/C++ programming language? Explain each of them with a suitable example. (07 marks)
b) What are primitive and non-primitive data types? Write the range of values and size of each data type. (07 marks)

Q. No.3
a) Write an algorithm and flowchart to find the reverse of a number. (14 marks)
b) Write an algorithm and flowchart to find the Sum of individual digits of a given number. (07 marks)

OR

Q. No.3
a) Write a C/C++ program and flowchart to find the largest among three numbers. (07 marks)
b) List and explain the Unconditional and Conditional Branching through example code? (07 marks)

Q. No.4

a) Write a C/C++ program and flowchart to generate the fibonacci series. (07 marks)

b) Write a C/C++ program to find the largest and smallest number from the given set of numbers using ***Recursion.*** (07 marks)

OR

Q. No 4

a) Discuss the idea of pointers. Also, explain the ***call-by-value*** and ***call-by-reference*** with a suitable example for each.

(07 marks)

b) Write a program in C to calculate the length of a string using a ***pointer***. (07 marks)

Q. No.5

a) Write an algorithm and flowchart to find the key element in an array using binary search. (07 marks)

b) Write a sort( ) function in C/C++ that implements bubble sort. (07 marks)

OR

Q. No .5 Write a C/C++ program from scratch to find the roots of a quadratic equation? (14 marks)