

ROLL NO:

(To fill the roll no. is compulsory)

ODD SEMESTER EXAMINATION - 2024-25**B.C.A Mock paper****Semester: I****SUBJECT CODE: BCA107****PROGRAMMING IN C****Time: 2:30 Hours****Maximum Marks: 70**

NOTE: THE QUESTION PAPER CONTAINS THREE SECTIONS.**ATTEMPT ALL THE SECTIONS.**

SECTION-A

NOTE: Attempt all parts of the following questions. (14 Marks)

Q. 1. Answer the following questions: (7 × 1 = 7 Marks)

- a) What is the purpose of the `#include <stdio.h>` directive in C?
- b) Define a function prototype in C.
- c) What is the difference between global and local variables in C?
- d) What is a `typedef` in C? Provide an example.
- e) Explain the use of `break` and `continue` statements in loops.
- f) What is the difference between a syntax error and a runtime error in C?
- g) Name two storage classes in C and describe their scope and lifetime.

Q. 2. Answer the following questions: (7 × 1 = 7 Marks)

- a) What is the function of the `goto` statement in C?
- b) How do you declare and initialize a 2D array in C?
- c) Explain the difference between a stack and a heap in memory allocation.
- d) What are wild pointers?
- e) Describe the purpose of the `sizeof` operator in C.
- f) What are bitwise operators in C? Provide an example.
- g) What are the advantages of using macros in C?

SECTION-B

NOTE: Attempt all the questions. ($7 \times 2 \times 2 = 28$ Marks)

Q. 3.

(i)

a) Write a program in C to calculate the sum of digits of a number using recursion.

OR

b) Explain the difference between call by value and call by reference in C with examples.

(ii)

a) Write a program to demonstrate the use of switch-case with a menu-driven approach.

OR

b) What is a nested loop? Write a program in C to print a multiplication table.

Q. 4.

(i)

a) Explain the difference between structure and union in C. Write examples of each.

OR

b) Write a program to reverse a string using a pointer.

(ii)

a) What is a function pointer? Write a program to demonstrate its usage.

OR

b) Write a program in C to sort an array using the bubble sort algorithm.

SECTION-C

NOTE: Attempt all questions. ($14 \times 2 = 28$ Marks)

Q. 5.

a) Explain the concept of file handling in C. Write a program to append data to a file.

OR

b) What are dynamic memory allocation functions in C? Write a program demonstrating the use of `calloc()` and `free()`.

Q. 6.

a) What is a String and also types of all important predefined function ?

OR

b) Write a program in C to implement matrix addition using functions.
