
ROLL NO:

(To fill the roll no. is compulsory)

ODD SEMESTER EXAMINATION - 2024-25

B.C.A AI/Cloud Mock paper

Semester: I

SUBJECT CODE: BCA104

PROGRAMMING IN C L

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 `void main()` function in C?
- b) Define a constant in C and explain its use.
- c) What is the difference between `float` and `double` data types in C?
- d) What is a preprocessor directive? Provide two examples.
- e) What is the purpose of the `getch()` function?
- f) Name any two bitwise operators in C and explain their use.
- g) What is the full form of `EOF` in C?

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

- a) Explain the use of the `else if` ladder in decision-making.
 - b) How do you declare a multi-dimensional array in C?
 - c) How can a character variable be initialized?
 - d) What is the difference between `scanf()` and `gets()` in C?
 - e) Who developed the UNIX operating system alongside C?
 - f) Write the solution of the expression $(5 + 3) * 2 - 8 / 4$.
 - g) How does the modulus operator `%` work in C?
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SECTION-B

NOTE: Attempt all the questions. (7 × 2 × 2 = 28 Marks)

Q. 3.

(i)

- a) Differentiate between while and do-while loops with an example.

OR

- b) Explain the concept of operator associativity with an example.

(ii)

- a) Write a C program to print the first 10 Fibonacci numbers using a loop.

OR

- b) Describe the syntax of a for loop and write a program to calculate the sum of the first N natural numbers.

Q. 4.

(i)

- a) Explain the concept of function overloading in C and provide an example.

OR

- b) What is the purpose of the `goto` statement? Write a program to demonstrate its usage.

(ii)

- a) Describe the role of pointers in dynamic memory allocation. Write an example using `malloc()`.

OR

- b) Write a program to check whether a number is a prime number or not.

SECTION-C

NOTE: Attempt all questions. (14 × 2 = 28 Marks)

Q. 5.

- a) Discuss the differences between arrays and linked lists. Write an example for a singly linked list.

OR

- b) Explain the concept of recursion in C with an example program to calculate the GCD of two numbers.

Q. 6.

- a) What is the purpose of file modes in C? Explain the usage of `r`, `w`, and `a` modes with examples.

OR

- b) Write a detailed note on the history and types of programming languages.
