

Enrollment No./Seat No.:

**GUJARAT TECHNOLOGICAL UNIVERSITY**  
**BCA/MCA INTEGRATED - SEMESTER - I EXAMINATION - WINTER 2025**

**Subject Code: BC01001021**

**Date: 10-12-2025**

**Subject Name: Fundamental of Programming**

**Time: 10:30 AM TO 01:00 PM**

**Total Marks: 70**

**Instructions**

- 1. Attempt all questions.**
- 2. Make suitable assumptions wherever necessary.**
- 3. Figures to the right indicate full marks.**
- 4. Use of simple calculators and non-programmable scientific calculators are permitted.**

	<b>Marks</b>
<b>Q.1 (a)</b> I. Explain the use of getchar() and putchar() functions. II. Difference between for loop and while loop. III. Explain any two mathematical functions used in C. IV. Define Logical Error with an example. V. What is a Flowchart? VI. Write the rules for naming identifiers in C. VII. What is the purpose of EOF in file handling?	<b>07</b>
<b>(b)</b> List all the operators available in C and explain Logical Operators with suitable examples.	<b>07</b>
<b>Q.2 (a)</b> What is a Flowchart? Explain its importance in programming and draw a flowchart to find the sum and average of five numbers.	<b>07</b>
<b>(b)</b> What is a Linker, and what is its role in program execution? How does it differ from a Loader?	<b>07</b>
<b>OR</b>	
<b>(b)</b> What is the Structure of a C Program? Explain the different sections of a C program with the help of a suitable example.	<b>07</b>
<b>Q.3 (a)</b> Explain the concept of arrays in C. Write a program to find the largest element among three elements.	<b>07</b>
<b>(b)</b> Write a C function to check whether a given number is a palindrome or not using functions.	<b>07</b>
<b>OR</b>	
<b>(a)</b> Write a C program using switch-case to perform a simple calculator that can add, subtract, multiply, and divide two numbers.	<b>07</b>
<b>(b)</b> Write a C program using loop to find the sum of digits of a given number.	<b>07</b>
<b>Q.4 (a)</b> List all types of functions and explain Function with no arguments and no return value.	<b>07</b>
<b>(b)</b> What is a Nested Structure? Explain with an example.	<b>07</b>

**OR**

- (a) Explain how to access structure members using the dot (.) and arrow (→) operators in C. 07
- (b) What is Pointer Arithmetic? Explain Increment (ptr++), Decrement (ptr--), Addition, and Subtraction in pointers. 07
- Q.5** (a) Explain File Handling in C. How do you declare, open, and close a file? (Use fopen() and fclose() functions) 07
- (b) Explain file modes in C: 07  
Read (r), Write (w), Append (a), Read + Write (r+, w+, a+)

**OR**

- (a) What is End of File (EOF)? Explain the use of the feof() function with an example. 07
- (b) Explain the concept of working with binary files in C with an example. 07  
How do you open binary files in "rb" and "wb" modes?

\*\*\*