

Code No: **R231105**

R23

SET - 1

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY GURAJADA VIZIANAGARAM
I B. Tech I Semester Supplementary Examinations June-2025
INTRODUCTION TO PROGRAMMING

(Common to all branches)

Time: 3 hours

Max. Marks: 70

Question paper consists of Part A, Part B.
Part A is compulsory, Answer all questions.
In Part B, Answer any one question from each unit.

PART-A

(20 Marks)

- 1 a) Define an algorithm and list its characteristics. [2]
- b) Explain the top-down approach in problem solving [2]
- c) Differentiate between while and do-while loops in C. [2]
- d) What is the purpose of the break statement in C? [2]
- e) Explain the concept of a pointer in C. [2]
- f) What is dynamic memory allocation? Give an example. [2]
- g) Define a function in C and list its components. [2]
- h) What is the difference between call by value and call by reference? [2]
- i) Explain the purpose of structures in C. [2]
- j) What is the difference between text and binary files in C? [2]

PART-B

(50 Marks)

Unit-I

- 2 a) Discuss the phases of problem solving in computer programming. [5]
- b) Write an algorithm to find the factorial of a given number. [5]

(OR)

- 3 a) Explain the importance of program verification and its techniques. [5]
- b) Describe algorithm analysis and its notations with examples. [5]

Unit-II

- 4 a) Explain the structure of a C program with an example. [5]
- b) Write a C program to check if a number is prime using if-else. [5]

(OR)

- 5 a) Discuss different types of operators in C with examples. [5]
b) Write a C program to print the Fibonacci series using a for loop. [5]

Unit-III

- 6 a) Explain how arrays are passed as function arguments in C. [5]
b) Write a C program to perform matrix addition using two-dimensional arrays. [5]

(OR)

- 7 a) Discuss pointer arithmetic with examples. [5]
b) Write a C program to swap two numbers using pointers. [5]

Unit-IV

- 8 a) Explain the categories of functions in C with examples. [5]
b) Write a C program to find the length of a string without using library functions. [5]

(OR)

- 9 a) Discuss the concept of recursion with an example program. [5]
b) Write a C program to reverse a string using pointers. [5]

Unit-V

- 10 a) Explain nested structures with an example. [5]
b) Write a C program to store student details using an array of structures. [5]

(OR)

- 11 a) Discuss file operations in C for reading and writing text files. [5]
b) Write a C program to copy the contents of one text file to another. [5]
