

Seat No./Enrollment No.: _____

GUJARAT TECHNOLOGICAL UNIVERSITY
BACHELOR OF ENGINEERING – SEMESTER 1 – EXAMINATION – SUMMER 2026

Subject Code: 3110003

Date: 15/07/2026

Subject Name: Programming for Problem Solving

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. Simple and non-programmable scientific calculators are allowed.

- Q.1** (a) What is a Flowchart? List out its symbols and purpose. 03
(b) Explain the major components of a Computer System and their Functions. 04
(c) Write algorithm to print Fibonacci series upto n terms 07
- Q.2** (a) Define: Header files, Constants, and Variables. 03
(b) What is Type Casting? State Its Types with example. 04
(c) Define Precedence and Associativity. Draw table of it and explain how they differ with an example of each. 07
- OR
- Q.2** (c) 'C language supports a rich set of built-in operators.' Explain Unary, Binary, and Ternary Operators with example. 07
- Q.3** (a) Compare: if-else ladder Vs. Switch. 03
(b) What is an Infinite Loop? What is Nested Loop? Give examples of both. 04
(c) Write A C Program to print Multiplication Table. 07
- OR
- Q.3** (a) Compare: Entry Controlled Loop Vs. Exit Controlled Loop. 03
(b) Define: Break, Continue, Goto, Label. 04
(c) Write a C program to read basic Colour Codes like R, G, B and print the Colour Name (Red, Green, Blue) using Switch statement. 07
- Q.4** (a) Difference between Library Function and User-defined Function. Give Examples. 03
(b) Explain Recursion with advantages and disadvantages. 04
(c) Write a C Program using Function to find Square of a number. 07
- OR
- Q.4** (a) What are Local and Global Variables? Give an example. 03
(b) Describe the Classification of User-Defined Functions (UDF) based on Arguments/Return Type. 04
(c) Write a C Program to find the **Greatest Common Divisor** (GCD) of two numbers using **Recursion**. 07
- Q.5** (a) Explain difference between Structure AND Union. 03
(b) Explain fopen() and its various modes (r, w, a, r+) for File Handling. 04
(c) Write a C Program to Copy and Concatenate Strings using prebuild string functions. 07
- OR
- Q.5** (a) What is an Array? Mention types of arrays. 03

(b) Explain: malloc (), calloc (), free (), realloc ().

04

(c) Write a C Program to Copy contents of one file to another.

07
