

GUJARAT TECHNOLOGICAL UNIVERSITY**BE- SEMESTER-I&II EXAMINATION – SUMMER 2025****Subject Code:3110003****Date:27-06-2025****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.

MARKS

Q.1 (a) Write an algorithm to find factorial of given number by user input. **03**
 (b) Draw a flowchart to check whether the entered number is prime or not. **04**
 (c) List and explain different data types available in C. **07**

Q.2 (a) Demonstrate the working of ternary operator and sizeof operator with an example. **03**
 (b) Differentiate between while and do..while loop. **04**
 (c) Write a C program to print following pattern: **07**

For e.g. input = 5
 1
 2 2
 3 3 3
 4 4 4 4
 5 5 5 5 5

OR

(c) Write a C program to print following pattern: **07**
 For e.g. input = 5
 *
 **

Q.3 (a) Explain type casting with example **03**
 (b) Differentiate between break and continue. **04**
 (c) Write a program to find out the maximum number from integer array of 5 elements. **07**

OR

Q.3 (a) Explain else...if ladder with example. **03**
 (b) Explain getch(), putch(), gets(), puts(). **04**
 (c) What is function? Differentiate between call by value and call by reference with example. **07**

Q.4 (a) Explain nested structure with example **03**
 (b) Explain following string handling functions: **04**
 1). strcat()
 2). strlen ()
 (c) Write a C program to check weather given integer number is palindrome or not? **07**

OR

Q.4 (a) State the use of Union in ‘C’ with example **03**
 (b) Briefly explain memory management functions. **04**

(c) Write a C program to count total number of vowel in given string. (for example input string =”hello” , output=2) 07

Q.5 (a) Demonstrate the use of void * with example 03
(b) Demonstrate the use of fopen() and fprintf() function of file handling 04
(c) Write a c program to count total number of characters, words and line for any text file using file handling function 07

OR

Q.5 (a) Demonstrate the pointer arithmetic with example. 03
(b) show the use of fclose() and fscanf() function of file handling 04
(c) Write a c program to copy content of one text file to another text file 07
