Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE- SEMESTER–I & II(NEW)EXAMINATION – SUMMER 2022

Subject Code:3110003   **Date:06-08-2022**
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.**

			Mark
Q.1	**(a)**	**Answer the following questions**	**03**
	1.	Define: Compiler	
	2.	Justify, 2 and '2' both are not same in C language.	
	3.	What is the role of **sizeof** operator in C language?	
	(b)	**Answer the following questions**	**04**
	1.	Ternary operator can be nested. (True/False)	
	2.	What do you mean by enumerated data type in C language?	
	3.	What is the difference between char *p and char p[]?	
	4.	What do you mean by function prototype?	
	(b)	**Answer the following questions**	**07**
	1.	Define Algorithm.	
	2.	What do you mean by recursion?	
	3.	What do you mean by program and program control?	
	4.	What is a pointer?	
	5.	What is the role of getc( ) and getw() file functions?	
	6.	Programming needs logic building. Justify	
	7.	Define Interpreter.	

Q.2 (a) Write the outputs of the following expression: **03**
  i)   50 % 2 / 3 + 2
  ii)   21 / (int) 2.5 + 3
  iii)   (1 > 2) || (2 < 3) && 5 < 1

(b) Write a program to print Fibonacci series.e.g.0, 1, 1, 2, 3, 5, 8, 13.   **04**

(c) Explain the working of various bit-wise operators with the example.   **07**
                                          OR
(c) List out all various string functions and describe them with syntax and   **07**
        example.

Q.3 (a) Explain ternary (**?:**) operator in detail with the example.   **03**
(b) Discuss the need of break and continue statements with example.   **04**

(c) Design a flowchart for checking whether a given number is palindrome or not. **07**
                                          OR
Q.3 (a) What is meant by array of pointers? Explain it with example.   **03**

(b) Write a program to print the triangle shown below.   **04**

            A
            A B
            A B C
            A B C D

(c) Draw block diagram of computer system and explain the functions of each component in detail.   **07**

Q.4 **(a)** Explain type casting with example.   **03**
    (b) Compare and contrast goto statement and switch statement with example.   **04**

    (c) Write a recursive program to find factorial of a given number.   **07**

OR

Q.4 **(a)** Differentiate function and macro.   **03**
    (b) Explain while loop and do-while loop with example.   **04**

    (c) Explain one dimensional array, two dimensional array and multi-dimensional array with their syntax and example.   **07**

OR

Q.5 **(a)** Differentiate call by value and call by reference.   **03**
    (b) Explain structure within structure with example.   **04**

    (c) Explain error handling in file system with example.   **07**

OR

Q.5 **(a)** Define Union in 'C' with example.   **03**
    (b) Define dynamic memory allocation. Explain malloc() and calloc().   **04**

    (c) Explain the following File Handling functions: 1. fseek( ) 2. ftell( ) 3. fread( ) 4. fwrite( ) 5. fscanf( ) 6. fprintf( ) 7.rewind( )   **07**

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