

Seat No.: \_\_\_\_\_

Enrolment No. \_\_\_\_\_

## GUJARAT TECHNOLOGICAL UNIVERSITY

BE – SEMESTER 1&2 EXAMINATION – SUMMER 2020

Subject Code: 3110003

Date: 05/11/2020

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.

	Marks
<b>Q.1</b> (a) Explain different symbols used in flowchart.	<b>03</b>
(b) Write algorithm or flowchart for finding maximum out of three numbers entered by user.	<b>04</b>
(c) Explain different categories of operators available in C programming.	<b>07</b>
<b>Q.2</b> (a) Explain entry controlled and exit controlled loop with proper syntax.	<b>03</b>
(b) Explain 1) nested if-else statement 2) break statement.	<b>04</b>
(c) Write a program to store 10 elements in array given by user and to find maximum out of those 10 elements.	<b>07</b>
<b>OR</b>	
(c) Write a program to find a character from the string, string and character to be searched both will be given by user.	<b>07</b>
<b>Q.3</b> (a) Show 1D array declaration, initialization and iteration.	<b>03</b>
(b) Explain type conversion and type casting with example.	<b>04</b>
(c) Write a C program to read numbers 1 to 7 and print relatively day Sunday to Saturday using switch statement.	<b>07</b>
<b>OR</b>	
<b>Q.3</b> (a) List any three header file with its usage.	<b>03</b>
(b) Explain four basic data types in C and provision to extend range for appropriate data types.	<b>04</b>
(c) Write a C program to find factorial of a given number.	<b>07</b>
<b>Q.4</b> (a) Write a program to find area of triangle.	<b>03</b>
(b) Explain problem solving using recursion with any example.	<b>04</b>
(c) What is user defined function? Explain pass by value and pass by reference in functions with example.	<b>07</b>
<b>OR</b>	
<b>Q.4</b> (a) Show 2D array declaration, initialization and iteration.	<b>03</b>
(b) Explain any four inbuilt string functions.	<b>04</b>
(c) Write a function in the program to return 1 if number passed is prime otherwise return 0.	<b>07</b>
<b>Q.5</b> (a) Explain various file management function in C.	<b>03</b>
(b) Show structure declaration and initialization with proper syntax.	<b>04</b>
(c) Write a C program to find $1+1/2!+1/3!+1/4!+.....+1/n!$ .	<b>07</b>

**OR**

- Q.5** (a) What is pointer? Explain with example to store and print the address of variable using pointer **03**
- (b) Show the usage of malloc( ) and calloc( ) with syntax. **04**
- (c) Define a structure “personal” that would contain person name, date of joining and salary. Using this structure read information of 5 people and print the same on screen. Also display sum of salary of all 5 people. **07**

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