

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.

Q.1	Mark
(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 <b>sizeof</b> 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) $21 / (\text{int}) 2.5 + 3$	
iii) $(1 > 2) \parallel (2 < 3) \&\& 5 < 1$	
(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
<b>OR</b>	
(c) List out all various string functions and describe them with syntax and example.	07
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
<b>OR</b>	
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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