Seat No.: _____    Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY
**BE –SEMESTER 1&2(NEW SYLLABUS)EXAMINATION- WINTER 2018**

**Subject Code:3110003**                                     **Date: 09-01-2019**
**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.**

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|---|---|---|---|
| **Q.1** | **(a)** | Define: algorithm, flowchart, compiler | **03** |
| | **(b)** | Why null value is used in string? Justify your answer with example | **04** |
| | **(c)** | List all operators used in C and explain any three with example. | **07** |
| | | | |
| **Q.2** | **(a)** | What is UDF? Describe advantages of UDF. | **03** |
| | **(b)** | Draw all symbols used in flowchart and draw flowchart to find factorial number. | **04** |
| | **(c)** | Explain while loop with example. | **07** |
| | | **OR** | |
| | **(c)** | Explain for loop with example. | **07** |
| **Q.3** | **(a)** | Describe local and global variable with example. | **03** |
| | **(b)** | Explain break and continue statement with example. | **04** |
| | **(c)** | Write a C program to input an integer number and check last digit of number is even or odd. | **07** |
| | | **OR** | |
| **Q.3** | **(a)** | Define general form of 1) do while loop 2) Nested if 3) goto | **03** |
| | **(b)** | Describe precedence and associativity of operators with example. | **04** |
| | **(c)** | Explain switch case statement with example to read number between 1 to 7 and print relatively day Sunday to Saturday. | **07** |
| **Q.4** | **(a)** | What is pointer? Explain with example to print the address of variable using pointer. | **03** |
| | **(b)** | Explain fopen() and its mode with example to write a string into file | **04** |
| | **(c)** | Define a structure data type called time_struct containing three member's integer hours, minutes, second. Develop a program that would assign values to individual member and display the time in following format : HH:MM:SS | **07** |
| | | **OR** | |
| **Q.4** | **(a)** | Describe array with example. | **03** |
| | **(b)** | What is string? Explain with example to find a character from string. | **04** |
| | **(c)** | What is structure? How to access the elements of structure? How to calculate size of structure? Explain with example. | **07** |
| **Q.5** | **(a)** | Define recursion. List the advantages of recursion. | **03** |
| | **(b)** | Classification of User defined function's components (elements) | **04** |
| | **(c)** | Create a function to check number is prime or not. If number is prime then function return value 1 otherwise return 0. | **07** |
| | | **OR** | |
| **Q.5** | **(a)** | What do you mean by type conversion? Give example. | **03** |
| | **(b)** | Discuss parameter passing technique used in C with example. | **04** |
| | **(c)** | Create a function to swap the values of two variables. | **07** |