Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– 1st / 2nd EXAMINATION (NEW) – SUMMER 2018

Subject Code: 2110003   **Date: 23-05-2018**
Subject Name: Computer Programming and Utilization
Time: 02:30 pm to 05:00 pm   **Total Marks: 70**
Instructions:
1. **Question No. 1 is compulsory. Attempt any four out of remaining Six questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1   **Objective Question (MCQ)**   **Mark**

(a)   **07**

1. Keyboard is the _____ type of device
(a) Input   (b) Pointing   (c) Output   (d) Sound

2. The storage of a character variable is _____
(a)2 byte   (b)1 byte   (c) 8 byte   (d) 0 byte

3. What should be written in the program to get newline on the screen?
(a) printf("\n");   (b) echo "\\n";
(c) printf('\n');   (d) printf(" \\n ");

4. Which of these have highest precedence?
(a) ( )   (b) ++   (c) *   (d) >>

5. For loop is _____.
(a)Function Controlled Loop   (b)Entry Controlled Loop
(c) Exit Controlled Loop   (d) None of these

6. In flowchart for what purpose ◊ symbol is used?
(a) Processing   (b) Condition   (c) Data flow   (d) Input/output

7. The format string to accept a string is
(a)%c   (b)%d   (c)%f   (d)%s

(b)   **07**
1. _____ is generally used to increase the apparent size of physical memory.
(a) Secondary memory   (b) Virtual memory
(c) Hard-disk   (d) Disks

2. File manipulation functions in C are available in which header file?
(a) streams.h   (b) stdio.h   (c) stdlib.h   (d) files.h

3. What will be the output of following code.
```
{
    int x = 10, y=15;
    x = x++;
    y = ++y;
    printf("%d, %d \n" , x, y);
}
```
(a) 10, 15   (b) 10, 16   (c) 11, 16   (d) 11, 15

4. Array index start at (a) 1   (b) User Defined   (c) 0   (d) None of above

5. Which of the following operator is used to select a member of a structure variable
(a) .(dot)   (b) ,(comma)
(c) : (colon)   (d) ;(semicolon)

6. Address stored in the pointer variable is of type _____
(a) Character   (b) Integer
(c) Floating   (d) Array

7. ____ converts the programs written in assembly language into machine instructions.
(a) Machine compiler
(b) Interpreter
(c) Assembler
(d) Converter

Q.2	**(a)**	Name the major components of computer system and give their function.	**03**
	(b)	List out the operators used in C language and explain any three with example	**04**
	(c)	1. Define algorithm and explain different symbols used in flowchart.	**03**
		2. Draw a flow chart that shows how to find root of quadratic equation ax^2+bx+c.	**04**
Q.3	**(a)**	Describe the four basic data types. How could we extend the range of values they represent?	**03**
	(b)	Define variable and constant. Explain different types of constants.	**04**
	(c)	Write a C Program to convert temperature from Fahrenheit to Celsius and vice versa.	**07**
Q.4	**(a)**	What is array? Give example and advantages of array.	**03**
	(b)	Explain: 1. Nesting if-else statement 2. Use of break statement	**04**
	(c)	Write a program in 'C' to print the following pattern using loop statement.	**07**

```
 1
 2 2
 3 3 3
 4 4 4 4
 5 5 5 5 5
```

Q.5	**(a)**	Explain how string is defined in C. List the various inbuilt string functions.	**03**
	(b)	What is pointer? Explain how pointers are declared and initialized. State its advantages.	**04**
	(c)	Write a C program to read 10 numbers from user and store them in an array. Display Sum, Minimum and Average of the numbers.	**07**
Q.6	**(a)**	What is structure? Explain with example how to declare a structure and how to initialize it.	**03**
	(b)	What is dynamic memory allocation? Show the use of malloc() and calloc() function with their syntax.	**04**
	(c)	Explain nested structure and array of structure with example.	**07**
Q.7	**(a)**	Explain recursive function with proper syntax with small example.	**03**
	(b)	Describe file management? List the various file handling operations in c	**04**
	(c)	Explain call by value (pass by value) and call by reference (pass by reference) with examples in brief.	**07**

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