GUJARAT TECHNOLOGICAL UNIVERSITY
MCA(Integrated) - SEMESTER–I EXAMINATION WINTER-2018

Subject Code:4410603   **Date:05/01/2019**

Subject Name: Fundamentals of Programming I

Time:10.30 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.**

Q.1	**(a)**	1) Define a flowchart. State and name the symbols used to draw a flowchart.	**03**
		2) Write an algorithm to check whether the given number is odd or even	**02**
		3) Is the following assignment possible in C? why?	**02**

       char a[20];
       a="hello";

(b) Do as Directed: **07**
1) Define translator. Give its types.
2) What do you mean by unary operators?
3) The assignment statement a+b=c is a valid expression. (true/false)? Justify.
4) A variable can be made constant by declaring it with the qualifier _____ at the time of initialization.
5) The _____ statement is used to transfer control to a specified label
6) Which of the following is not a valid C keyword?
  a) case b)constant c) char   d) continue
7) The elements of an array are stored in _____ memory locations.

Q.2	**(a)**	List down the categories of operators available in C language. Explain any 4 in detail.	**07**
	(b)	Explain in detail the process of compilation and execution of a 'C' program. Draw an appropriate diagram and also mention the types of files used and generated.	**07**

OR

(b) Write a note on tokens available in C.   **07**

Q.3	**(a)**	Compare the use of switch statement with the use of nested if……else statement. Which is more convenient? Why? Explain the importance of break in Switch statement.	**07**
	(b)	What do you mean by user-defined functions? Explain function prototype, declaration and function body with proper examples. Also give advantages of using UDF.	**07**

OR

Q.3	**(a)**	Write a note on type conversion in expression giving suitable examples.	**07**
	(b)	What do you mean by recursion in functions? Explain in detail. Write a program to generate Fibonacci series using function recursion.	**07**

Q.4	**(a)**	Explain in detail storage classes available in C programming language.	**07**
	(b)	Define an array. How to declare and initialize one and two dimensional arrays. Write a C code to find average of first n natural numbers using array.	**07**

OR

Q.4	**(a)**	What is a string? How to store it in a 'C' program? Write a program to count the numbers of characters in a given string.	**07**

(b) Write an algorithm and draw the flowchart to find the maximum of three **07**
numbers. Also write the C code for the same.

Q.5 **(a)** Explain 4 built in String functions with syntax, use and proper examples. **07**
(b) Write a program to print the following pattern **07**
  If input=4 the output should be
     4
     4 3
     4 3 2
     4 3 2 1

OR

Q.5 **(a)** Write a short note on looping structures available in C **07**
(b) Write a program in c to find the factorial of a given number using recursion **07**

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