

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA (Integrated) - SEMESTER- 1 EXAMINATION – WINTER 2013

Subject Code:4410603**Date: 23/12/2013****Subject Name: Fundamentals of Programming-1****Time:2:30 pm TO 5:00 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)** Do as directed: **07**
- (i) Define Program.
 - (ii) What do you mean by unary operator?
 - (iii) Define Variables in C.
 - (iv) What is the role of a Linker?
 - (v) What do you mean by scope of a variable?
 - (vi) Give the syntax of switch statement.
 - (vii) What does a header file consist of?
- (b)** Differentiate the following:
- (i) Recursion and Iteration. **02**
 - (ii) strcat() and strncat() **02**
 - (iii) Formal and Actual parameters. **02**
 - (iv) Break and Continue. **01**
- Q.2 (a)** Give the Algorithm and Flowchart of finding the biggest among three numbers. **07**
- (b)** (i) Explain the Compilation and Execution process of a C program. **04**
- (ii) Describe the structure of a C program. **03**
- OR**
- (b)** (i) Write short notes on Data types in C. **04**
- (ii) Describe the rules for forming identifier names. **03**
- Q.3 (a)** Explain the looping statements with example. **07**
- (b)** (i) Write a program to print the following pattern: **05**
- ```

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

```
- (ii) What do you mean by Sparse matrices? **02**
- OR**
- Q.3 (a)** Define Operators in C. Explain any 3 operators with example. **07**
- (b)** (i) Write a program to search an element in an unsorted array using Linear search method. **05**
- (ii) Write short notes on Multidimensional arrays. **02**
- Q.4 (a)** What is Function prototype, Function definition and Function call. Explain with an example. **07**
- (b)** (i) Write a program to count the number of characters in a given string without using built in function. **04**
- (ii) Describe any 3 Character functions in C with syntax and purpose. **03**

**OR**

- Q.4** (a) Define Recursion. Discuss the advantages of Recursion. Give an example. **07**  
(b) (i) Write a program to check the given string is palindrome or not. [Palindrome is a word whose reverse is same as itself]. **04**  
(ii) Write short notes on second generation of programming languages (2GL). **03**
- Q.5** (a) Explain the storage classes available in C with suitable examples. **07**  
(b) Write a program to find the sum of digits of a positive integer using function. **07**
- OR**
- Q.5** (a) Explain how to declare and initialize 1D and 2D arrays. Give appropriate examples. **07**  
(b) Write a program to transpose an M x N matrix. **07**

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