

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA Sem-I Remedial Examination April 2010****Subject code: 610001****Subject Name: Fundamentals of Programming (FOP)****Date: 05 / 04 / 2010****Time: 12.00 noon – 02.30 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)** Explain the following with example: **02**
- I. C Tokens **02**
 - II. Nested if statement **03**
 - III. strcat() and strcmp() functions **03**
- (b)** Attempt the following: **02**
- I. What are the usages of argc and argv in C? **02**
 - II. Explain ftell () and fseek () functions. **03**
 - III. Explain the term Pointer to Pointer with suitable example. **03**
- Q.2 (a)** What are the different storage classes available in C language? **07**
Explain with suitable examples.
- (b)** Define the term algorithm. Write an algorithm to find the roots of any general quadratic equation $AX^2 + BX + C = 0$. **07**
- OR**
- (b)** Write a C program to count the number of digits in any given positive integer. **07**
- Q.3 (a)** Attempt the following: **03**
- I. What is the difference between break and continue? Explain with suitable example. **04**
 - II. Distinguish between while and do-while loop with suitable examples. **07**
- (b)** Write a C program to evaluate the product of any two matrices. **07**
- OR**
- Q.3 (a)** Attempt the following: **03**
- I. What is recursion? Explain with suitable example. **04**
 - II. Distinguish between structure and union with suitable examples. **07**
- (b)** Write a C function to check whether a given string is palindrome or not. A palindrome is a word whose reverse is same as itself e.g. noon, nitin etc. **07**
- Q.4 (a)** Explain the following with suitable examples: **04**
- I. Array of Pointers V/S Pointer to an Array **03**
 - II. Pointer to structure **07**
- (b)** Write a C program that accepts any line of text and counts the number of words in it. **07**

OR

- Q.4** (a) What is link list? Write a C program to generate a singly link list of integers. **07**
- (b) Write a program that converts any given decimal number to its hexadecimal equivalent. **07**
- Q.5** (a) Explain the usages of malloc (), calloc (), realloc () and free. **07**
- (b) Write a C program which counts number of vowels in any given text file where the name of the file is interactively given through the keyboard. **07**
- OR**
- Q.5** (a) What are the different categories of C Preprocessor statements? Explain with suitable examples. **07**
- (b) Write a program to read a text file “Small.txt”, containing only small letters and copy it to another file “Capital.txt” after converting all the small letters of “Small.txt” into capital letters. The names of both of the files are passed using command line arguments. **07**
