

GUJARAT TECHNOLOGICAL UNIVERSITY**MCA - SEMESTER-I • EXAMINATION – WINTER 2013****Subject Code: 2610001****Date: 20-12-2013****Subject Name: Fundamentals of Programming****Time: 02:30 pm TO 05:00 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) (i) What does a Header file consist of? **01**
(ii) Differentiate break and continue. **02**
(iii) Differentiate formal and actual parameters. **02**
(iv) Which storage class helps in faster execution of a program? How? **02**
- (b) (i) Discuss the Advantages and Limitations of Flow chart. **04**
(ii) Compare Array and Linked list. **03**

- Q.2**
- (a) (i) What is Bitwise Operators? Explain any one operator with example. **04**
(ii) How to define enumerated data type? Give example. **03**
- (b) (i) State the arguments that are passed in main() function. Discuss significance of each argument. **04**
(ii) Write short notes on typecasting. **03**

OR

- (b) (i) What do you mean by preprocessor directives? Discuss unconditional directives with example. **04**
(ii) What is an Array? How to initialize 1D and 2D Array? **03**
- Q.3**
- (a) (i) List and Describe any 2 Storage Classes in C. **04**
(ii) Differentiate User-defined Function and Built-in Function. **03**
- (b) Mention the Advantages of Pointers. Write a C program to sort an array using Pointers. **07**

OR

- Q.3**
- (a) (i) Define recursion. Discuss the advantages of Recursion and give an example. **04**
(ii) Differentiate Function Prototype and Function Definition. **03**
- (b) What is a Pointer? How pointers can be used for Call by reference parameter passing mechanism? Give example. **07**

- Q.4**
- (a) Construct an array of structure called 'student'. The data members are Name, Rollno, Class, Grade and Percentage of mark. Read n student's details and conduct a "linear search" to print the details of the student, given a particular Rollno as the key. **07**
- (b) Write a program to copy a text file which accepts source and destination file name from command line arguments. **07**

OR

- Q.4**
- (a) Explain structure variable in C language with syntax and example. How it differs from Union? Explain passing structure elements to function by taking suitable example. **07**
- (b) List the File Opening Modes with their purpose. Write a program to **07**

append data in an existing file.

- Q.5** **(a)** Write a C program to compare two files specified by the user, displaying a message indicating whether the files are identical or different. **07**
- (b)** Define Linked List. Give the functions for the following using Linked List: **07**
- i. Inserting a new node at the beginning
 - ii. Inserting a new node after a specific position

OR

- Q.5** **(a)** Differentiate Dynamic Vs Static Memory allocation. Explain calloc() and malloc() with an example. **07**
- (b)** Mention the types of Linked List. Give a function to insert a new node after a specified key node. **07**
