Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

MCA INTEGRATED- SEMESTER–II • EXAMINATION – SUMMER 2016

Subject Code: 4420602 **Date:27/05 / 2016**

Subject Name: Advanced C Programming

Time:10.30 AM 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)** Do as Directed :

1. Give difference between array and pointer **01**
2. Give difference between singly linked list and doubly linked list **01**
3. Give difference between tree and graph **01**
4. Define : array of pointer and pointer to array **02**
5. What is dangling pointer and null pointer? **02**

(b) Define :

1. Pointer to pointer. **02**
2. Pointer to function. **02**
3. Sling **01**
4. Tournament tree **01**
5. Siblings **01**

Q.2 **(a)**

1. What is structure? Explain how to create structure and how to access members of structure. **04**
2. Give difference between structure and union. **03**

(b)

1. Explain call by value and call by reference with e.g. **05**
2. Write rules of pointer expression. **02**

OR

(b) Explain typedef and enumeration in detail with e.g. **07**

Q.3 **(a)**

1. What is macro? Explain how to create macro in C with e.g. **03**
2. Explain conditional preprocessors in detail. **04**

(b) Write a program that will read a single word and rewrite it in the alphabetical order. I.e. the word STRING should be written as GINRST. **07**

OR

Q.3 **(a)** Write a program to read n integer number from keyboard and store them into a file All.txt. Store even numbers in Even.txt and odd numbers in Odd.txt files respectively. Display contents of all the three files. **07**

(b) Explain DMA with e.g. **07**

Q.4 **(a)** What is command line argument? Write a program to concate two files using command line arguments. **07**

(b) Convert following infix expression into postfix using stack table. **07**
A + B – C / D * E + F

OR

Q.4 **(a)** Explain fopen() and fclose() functions with e.g. Also explain all file opening modes in detail. **07**

(b) What is queue? List and explain types of queue. Also write functions to insert and delete an element from simple queue. **07**

Q.5 **(a)** Write functions : **07**

1. To insert node after specific node in singly linked list

2. To delete specific node from singly linked list

(b) Create binary tree from the given elements and find preorder, inorder and postorder traversals. **07**

52,77,62,26,45,97,33,16,49,35,88.

OR

Q.5 **(a)** Explain BFS and DFS in detail with e.g. **07**

(b)
1. Explain adjacency list and adjacency matrix with e.g. **03**
2. Define : **04**
   a. Degree
   b. Ancestors
   c. Parallel edges
   d. Extended binary tree

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