

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA Integrated - SEMESTER-II • EXAMINATION – SUMMER • 2015

Subject Code: 4420602

Date: 30-05-2015

Subject Name: Advanced C Programming

Time: 10:30 am - 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) Answer the following.
- 1) Define: i) Binary Tree ii) Cycle iii) Connected Graph iv) Leaf Node **04**
 - 2) Explain Dangling Pointer and Memory leak. **03**
- (b) Explain array implementation of Stack. What are the various operations perform on stack? Explain each in brief. **07**
- Q.2** (a) What do you mean by Traversing a Binary Tree? Write an algorithm for In Order and Post Order Traverser. **07**
- (b) Compare various types of linked lists in detail. **07**
- OR**
- (b) Write down various representation of Graph with the help of suitable example. **07**
- Q.3** (a) Explain accepting command line arguments with appropriate example. **07**
- (b) Write a program to perform following operations on singly linked list **07**
- i) Add node at end of list
 - ii) Delete node
 - iii) Search node
- OR**
- Q.3** (a) Differentiate between a structure and a union. **07**
- (b) Differentiate between array and linked list. Write down the various applications of linked list in brief. **07**
- Q.4** (a) Write an algorithm to convert infix expression into postfix expression. **07**
- (b) Write short note on **07**
- i) Pointers to pointers
 - ii) Array of pointers
- OR**
- Q.4** (a) What are the functions provided to read data from file? Explain each in brief. **07**
- (b) What is a pre processor directive? Explain any five pre processor with its usage. **07**
- Q.5** (a) Assume that a file INTEGER.TXT stores only integer numbers. A value $\div 10$ is store as last value to indicate EOF. Write a program to read each integer value store in the file while reading the value compute whether the value even or odd. If it is even than write that value in a file called EVEN.TXT else write it in ODD.TXT. Finally display the content of two files ϕ EVEN.TXT and ODD.TXT. **07**
- (b) What is dynamic memory allocation? Explain malloc, calloc, realloc and free functions. **07**
- OR**
- Q.5** (a) Write a program using structures to read and display the information about an Employee. **07**

- (b) Construct a Binary Tree of following post order and in order traversal.

07

In order : D B E A F C G

Post Order: D E B F G C A

Write down the pre order traversal of constructed tree.
