

GUJARAT TECHNOLOGICAL UNIVERSITY
MCA Integrated - SEMESTER– II • EXAMINATION – WINTER 2016

Subject Code: 4420602**Date:02/01/2017****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) Define following terms : 07**
1. Sink
 2. Sling
 3. NULL graph
 4. Siblings
 5. Extended binary tree
 6. Tournament tree
 7. Multigraph
- (b) Give Differences : 07**
1. Stack and Queue
 2. Linked list and Array
 3. Full binary tree and complete binary tree
 4. Pointer and array
 5. Singly linked list and doubly linked list
 6. Queue and circular queue
 7. Array of pointer and pointer to array
- Q.2 (a) What is pointer? How to declare and initialize pointer variable? Write rules of pointer expression. 07**
- (b) Explain call by value and call by reference with example. 07**
- OR**
- (b) Explain DMA (Dynamic Memory Allocation) in detail with all functions. 07**
- Q.3 (a) What is structure? How to declare structure and how to access members of structure? Explain array of structure with example. 07**
- (b) Explain conditional pre-processor directives in detail. 07**
- OR**
- Q.3 (a) Explain typedef and enumeration in detail with example. 07**
- (b) Define : dangling pointer, wild pointer, null pointer, void pointer, pointer to pointer, memory leak, pointer to function 07**
- Q.4 (a) 1. Give difference between structure and union. 03**
- 2. Explain command line arguments in detail with example 04**
- (b) Explain #include, #define and #pragma in detail with example. 07**
- OR**
- Q.4 (a) What is file? Explain fopen() with syntax and file opening modes. 07**
- (b) Write a program to create structure of student with 3 members, Roll no. , name and marks array. Create two functions : 07**

1. insert() - inserts record in file
2. display() - display records from file

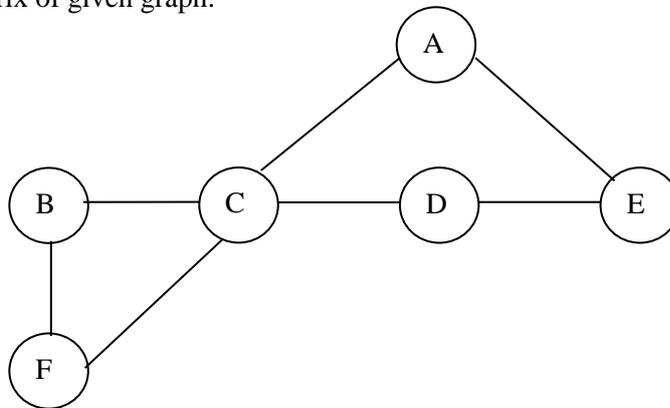
Q.5 (a) Convert following expression into prefix using stack table. Also draw expression tree. **07**

$A + B - C * D / F + G$

(b) What is linked list? List out types of linked list. Write a function to insert node in singly linked list. **07**

OR

Q.5 (a) Give difference between BFS and DFS using following graph. Also give adjacency matrix of given graph. **07**



(b) Find Post Order: **07**

Inorder = E A C K F H D B G

Preorder = F A E K C D H G B
