

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY
B. E. - SEMESTER – III • EXAMINATION – WINTER 2012

Subject code: 130702

Date: 10-01-2013

Subject Name: Data and File Structure

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) Explain PUSH and POP operation of the stack with algorithm. 07
(b) Write an algorithm for insert operation at end of Linked List. 07

- Q.2 (a) What is use of binary search tree? Construct sequential order binary tree (binary search tree) for following values. 07
10,15,17,8,7,9,11,12,13,4,14,5
(b) Explain delete operation of doubly linked list. 07

OR

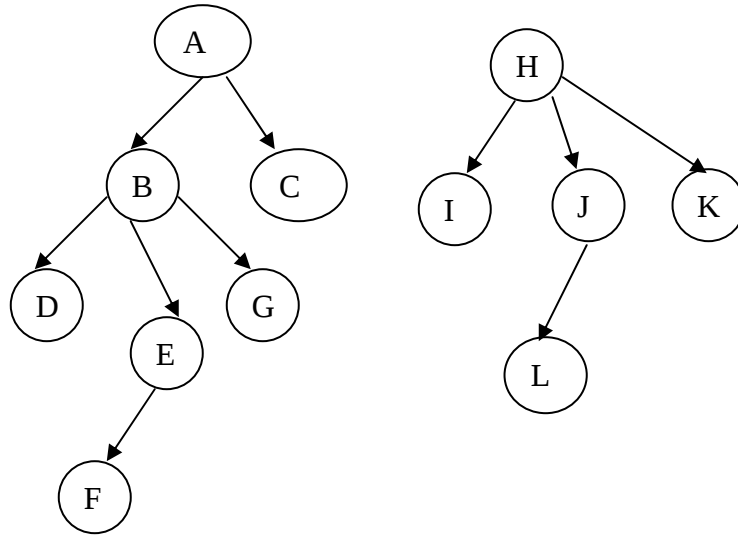
- (b) What are the advantages of doubly linked list? Write a C function to find maximum element from doubly linked list. 07
- Q.3 (a) Convert following expression into postfix notation. 07
(i) $A + (B - C) * D$ (ii) $A \wedge B * C \setminus D$
(iii) $(A + B) \setminus C * D \wedge E$
(b) Write a short note on threaded binary tree. 07

OR

- Q.3 (a) Explain insert and delete function of circular queue. 07
(b) Find value of following postfix expression using stack trace. 07
(i) $5\ 4\ 6\ +\ *\ 4\ 9\ 3\ /\ +\ *$
(ii) $3\ 5\ *\ 6\ 2\ /\ +.$

Q.4 (a) Trace procedure to convert following forest into binary tree.

06



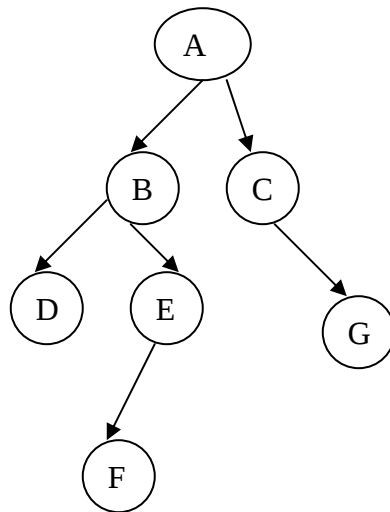
(b) Define : (i) Tree and binary tree (ii) intermediate node and leaf node
(iii) Sibling node and adjacent node (iv) path matrix.

08

OR

Q.4 (a) Find a post order and preorder traversal of a following tree.

07



Q.4 (b) Explain different Hash function methods.

07

Q.5 (a) Write a short note on indexed file organization.

07

(b) Explain DFS traversal of Graph using example.

07

OR

Q.5 (a) Write a short note on spanning tree.

07

(b) Write a short note on inverted key file organization.

07
