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

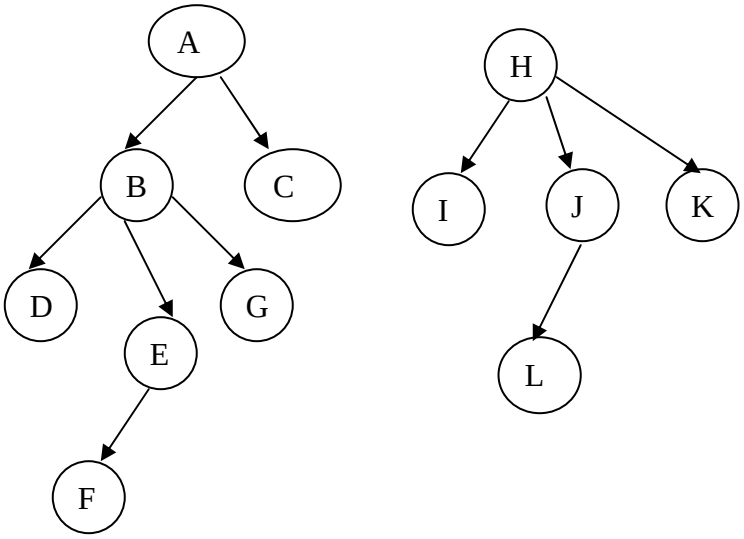
Time: 10.30 am – 01.00 pm **Total Marks: 70**

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. 10,15,17,8,7,9,11,12,13,4,14,5	07
	(b)	Explain delete operation of doubley linked list.	07
		OR	
	(b)	What are the advantages of doubley linked list? Write a C function to find maximum element from doubley linked list.	07
Q.3	(a)	Convert following expression into postfix notation. (i) A + (B - C) * D (ii) A ^ B * C \ D (iii) (A + B) \ C * D ^ E	07
	(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. (i) 5 4 6 + * 4 9 3 / + * (ii) 3 5 * 6 2 / +.	07

Q.4 (a) Trace procedure to convert following forest into binary tree. 06



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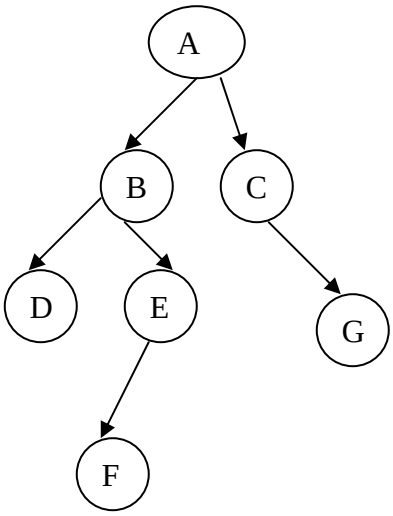
(b) Define : (i) Tree and binary tree (ii) intermediate node and leaf node (iii) Sibling node and adjacent node (iv) path matrix. 08

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

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