

ANNA UNIVERSITY
COLLEGE OF ENGINEERING, GUINDY
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
END SEMESTER EXAMINATION – MAR / APR 2011
B.E. (ELECTRICAL AND ELECTRONICS ENGINEERING)
V SEMESTER
EE 9305 DATA STRUCTURES AND ALGORITHMS

Time : 3 Hours

Answer ALL Questions

Max. Marks : 100

Part A

(10 × 2 = 20)

1. What are the advantages of doubly linked list over singly linked list?
2. What is an array?
3. What is meant by BST?
4. What is meant by traversal?
5. What is the worst case and average case complexity of Radix sort algorithm?
6. What is the worst case and average case complexity of Quick sort algorithm?
7. Define Algorithm.
8. What is Recursion? Explain with an example.
9. Define undirected graph .
10. Give a diagrammatic representation of an adjacency list representation of a graph.

Part B (5 × 16 = 80)

11. (i) Write all three binary tree traversal algorithms. (8)
 - 11.(ii) Write algorithms for inserting and deleting an element into/from a binary tree. (8)
 - 12.(a)(i) Give an algorithm to multiply two matrices.. (8)
 - 12.(a)(ii) Give an algorithm to delete an element containing the information INFO from the linked list. (8)
- (OR)**
- 12.(b)(i) Write an algorithm to transform infix expression to postfix expression.. (8)
 - 12.(b)(ii) Write algorithms for insert and delete operations of linked list implementation of queue. (8)

13.(a) Write Quick sort algorithm. (16)

(OR)

13.(b)(i) Write algorithms to implement heap sort. (10)

13.(b)(ii) Write Insertion sort algorithm. (6)

14.(a)(i) Describe the Dynamic Programming method of algorithm design with an example. (8)

14.(a)(ii) Describe the Greedy method of algorithm design with an example. (8)

(OR)

14.(b)(i) Describe the divide and conquer method of algorithm design with an example. (8)

14.(b)(ii) Explain the Backtracking method of algorithm design with an example. (8)

15.(a)(i) Write an algorithms to search depth-first on a graph G (8)

15.(a)(ii) Explain Prim's & Kruskal's Algorithm with an example.. (8)

(OR)

15.(b) (i) Write an algorithms to search breath-first on a graph G.. (8)

15.(b)(ii) Describe Dijkstra's algorithm with an example (8)

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