

MAY 2012

**P/ID 17460/
RCK/PCAK**

Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

1. (a) Write ADT operations for array implementation of a queue.

Or

- (b) Derive the performance measures of an algorithm in terms of the complexity analysis.

2. (a) Write a program to illustrate the operation of a Singly Linked List.

Or

- (b) What is stack? Explain its importance.

3. (a) Explain Deletion operation in Binary Search Tree.

Or

- (b) Differentiate Strongly and Weakly connected Graph.

4. (a) What is Heap Sort? Using the heap algorithm, sort the following :

35 45 25 11 6 85 17 38

Or

- (b) Explain external sorting method with examples.
5. (a) Write the advantages and disadvantages of AVL Trees.

Or

- (b) Explain insertion operation in Red Black Tree.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

All questions carry equal marks.

6. Explain in detail the representation of array and operations performed on an array.
7. Explain the various operations of stack with its implementation.
8. Mention and explain various operations in Queues. Give examples for each.
9. Give detailed explanation of Graph Traversal techniques.

10. Explain in detail about Binary Search Tree and Threaded Binary Tree.
 11. Trace the steps through hand to sort the following in Quick Sort.
28, 7, 39, 3, 63, 13, 61, 17, 50, 51.
 12. Explain in detail about Bubble Sort with examples.
 13. What is B-Tree? Explain various operations on B-Trees.
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