

Roll No.

97629

**B.C.A. 3rd Semester (New)
(Regular)**

Examination-December, 2012

Algorithms & Advanced Data Structures

Paper-BCA-202

Time : 3 hours

Max. Marks : 80

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the examination.

Note : Attempt any **five** questions in all. All questions carry equal marks.

1. (a) Explain threaded binary tree by giving suitable examples. How can you represent it in memory ? 8
- (b) Write the algorithms of Preorder, Inorder and Postorder traversal . 8

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2. (a) Explain the various methods of tree traversal by giving suitable example. 8
- (b) Define B-tree. Explain the insertion and deletion operation of B-tree by giving suitable example. 8
3. (a) Discuss the best case of Quick sort and Bubble sort. 8
- (b) Write the algorithms for 8
- (i) Selection sort
- (ii) Insertion sort.
4. (a) Explain various methods of representing graphs in memory by giving suitable example. 8
- (b) What is the major limitation of tree structure? 8
5. (a) What are the issues involved in external sorting? 8
- (b) Explain Boyer-Moore algorithms. 8

6. (a) What are the four basic steps of dynamic programming ? 8
- (b) List the phases of an NP algorithm. 8
7. (a) Explain what do you understand by the non-determinism in an NP problem ? 8
- (b) Explain reducibility picking up an example from real life situation. 8
8. (a) Find the speedup and efficiency obtained on using the parallel merge sort. 8
- (b) What are the advantages of PRAM models over fixed connection networks ? 8
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