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*

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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