Roll No. ………………..

2006

B. E. 3rd Semester (ECE)
Examination – December, 2011

DATA STRUCTURE & ALGORITHM

Paper : CSE-201-E

Time : Three hours]   *[Maximum Marks : 100*

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

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

1. (a) What is a data structure ? Explain the different operations to be performed on data structures.

    (b) What is stack ? Describe its linked list based implementation.

2. (a) What are priority queues ? Discuss different implementation schemes for priority queues. Also write its different application.

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(b) Write an algorithm to search a given value into linked list.

3. (a) What is balanced multi way search tree ? Mention its advantages and disadvantages.

(b) How do you represent the binary tree in the computers memory ? Also focus on AVL trees.

4. (a) What is meant by traversal of graph ? Discuss depth first traversal technique with the help of suitable example.

(b) What do you understand by hash table ? Discuss its implementation and different applications.

5. (a) What is meant by time complexicity of an algorithm ? Explain with suitable examples. Also discuss about best case, worst case and average case time of an algorithm.

(b) What is recursion ? Explain its uses with suitable example.

6. (a) Explain shell sort, merge short with suitable example. Also focus on efficiency of these algorithms.

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(b) Discuss recursive and non recursive algorithms.

7. (a) Write down the bottom up, top down heap sort approach and its applications.

   (b) Describe adjacency and path matrix.

8. Write short notes on the followings :

   (a) Priority queues

   (b) Threaded trees

   (c) Straight Sequential search

   (d) Postfix and prefix representation

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