Roll No. .....

2006

B.E. 3rd Sem. (ECE)

Examination, December, 2013

DATA STRUCTURE & ALGORITHM

'E' Scheme

Paper : CSE-201-F

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

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 examination.

Note : Attempt any *five* questions.

1. (a) What do you mean by Primitive and non-primitive data structures ? Differentiate between them. 10

(b) What are stacks ? What are various operations performed on stacks. 10

2. (a) What is a circular linked list ? What are its advantages over linear linked list ? Write algorithm to insert a node at desired position in a circular linked list. 10

(b) What is doubly ended Queue ? Write algorithm to implement doubly ended queue. 10

3. Describe the following briefly : 20

(i) Binary Tree Traversals

(ii) Dynamic Implementation of a Binary Tree.

(iii) Operations on Binary Trees.

4. (a) Write algorithms for B.F.T. & D.F.T. of graphs. 10

   (b) What do you mean by Heap ? Explain operations of Heap. 10

5. (a) What do you mean by divide and conquer approach ? Explain one sorting algorithm based on this approach. 10

   (b) Write Recursive algorithm for Binary Search. 10

6. (a) What do you mean by Hashing ? What is collision ? Describe various collision resolution techniques with example. 12

   (b) Write a Program/algorithm to sort n numbers using binary search. 8

7. (a) Trace the heap sort algorithm for the following data : 15

   1, 2, 3, 5, 4, 7, 12, 9, 8

   (b) Write an algorithm for Linear search. 5

8. Write short notes on (any two) : 2 x 10 = 20

   (i) Big O notations

   (ii) AVL Trees

   (iii) Skip Lists.