

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.