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.
 - (b) What are stacks? What are various operations performed on stacks.
- 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.
 - (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.
- 5. (a) What do you mean by divide and conquer approach? Explain one sorting algorithm based on this approach.
 - (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.
 - (b) Write a Program/algorithm to sort n numbers using binary search.
- 7. (a) Trace the heap sort algorithm for the following data:

 $2 \times 10 = 20$

- 1, 2, 3, 5, 4, 7, 12, 9, 8
- (b) Write an algorithm for Linear search.
- 8. Write short notes on (any two):
 - (i) Big O notations
 - (ii) AVL Trees
 - (iii) Skip Lists.