Total No. of Questions : 5] [Total No. of Printed Pages : 2

Roll No. .....

EC–502(O)

B. E. (Fifth Semester) EXAMINATION, Dec., 2009

(Old Scheme)

(Electronics & Communication Engg. Branch)

DATA STRUCTURES

(EC – 502)

Time : Three Hours

Maximum Mark : 100

Minimum Pass Marks : 35

Note : Attempt all the *five* questions. Assume data wherever necessary. All questions carry equal marks.

1. (a) What is structural programming ? Discuss the top-design method. 10

   (b) What do you mean by pointers ? Explain with suitable examples. 10

Or

   (a) What are the abstract data types ? 10

   (b) What is traversing ? Write the algorithm for traversing the linear array. 10

2. (a) What is linked list ? How a linked list will be maintained in memory ? 10

   (b) Write an algorithm to insert a node into linked list. 10

P. T. O.

Or

(a) Write an algorithm to delete a node from a linked list. 10

(b) What is the doubly linked list ? 10

3. What is binary tree ? Discuss the various representatives of a binary tree. 20

Or

How will you convert general trees to binary trees ? Explain with suitable examples. 20

4. Sort the following integers using quicksort and insertion sort : 20

25, 57, 48, 37, 12, 92, 86, 33

Or

Write the algorithm for merging the two sorted lists. 20

5. Define graphs and multigraphs. What do you mean by directed graph ? 20

Or

Define the term path matrix. Also write the shortest path algorithm of the graph. 20