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B.E./B.Tech.(Full Time) DEGREE END SEMESTER EXAMINATIONS, APR/MAY2012

ELECTRONICS AND COMMUNICATION ENGINEERING BRANCH

THIRD SEMESTER

EC 273 – PROGRAMMING AND DATA STRUCTURES

(REGULATIONS 2004)

Duration: 3 Hours

Max.marks:100

Answer ALL questions

PART-A (10x2=20 Marks)

1. Compare list ADT and queue ADT
2. What is stack?
3. What is meant by Binary Tree?
4. What are the different methods of binary tree traversal?
5. What does reference counting assume?
6. Define priority queue.
7. What is meant by Divide and Conquer Technique?
8. What are the sorting algorithms?
9. What is meant by Spanning Tree?
10. When is a topological ordering impossible?

PART-B (5X16=80 Marks)

- 11.(i) Explain how data and functions are organized in Object oriented programming. (8)
(ii) Write about various categories of Basic Data Types in C++. (8)

12.(a) Explain how binary search tree traversal is performed by pre-order and post-order traversal techniques. (16)

OR

12.(b) How does Prim's Algorithm construct minimum spanning tree from a graph? (16)

13.(a) Explain the heap management problems and list the rules for the importance of dynamic arrays. (16)

OR

13.(b) What are the two types of "Heap"? Explain. (16)

14.(a) Explain the procedure of "Heap Sort" for sorting numbers in ascending order. (16)

OR

14.(b) Explain the procedure of Insertion sort. (16)

15.(a) Write the algorithms to construct the minimum spanning tree for a graph? (16)

OR

15.(b) With graphs, paths, table configuration and Pseudo code explain unweighted shortest path algorithm. (16)