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B.E / B. Tech (Full Time) DEGREE END SEMESTER EXAMINATIONS, NOV/DEC 2013

ELECTRONICS AND COMMUNICATION ENGINEERING

THIRD SEMESTER

EC 273 – PROGRAMMING AND DATA STRUCTURES

(REGULATIONS 2004)

LO

Time: 3 Hours

Maximum Marks: 100

Answer ALL Questions

Part – A (10 x 2 = 20 Marks)

1. What is meant by "Stepwise refinement" in program development?
2. Define: "ADT". Give an example for it.
3. Differentiate "Binary Search Tree" and "Complete Binary Tree".
4. What are the three methods of binary tree traversal?
5. Define: "Priority Queue".
6. What is meant by "Hashing"?
7. What are sorting algorithms uses divide and conquer techniques?
8. Write the worst case time complexities of insertion sort and selection sort.
9. Define: Complete Graph and Connected Graph.
10. Write the names of the different methods of Graph Traversal.

Part – B (5 x 16 = 80 Marks)

11. Explain how Stack is used to convert the Infix expression into Postfix expression.
12. (a). Explain the procedure to construct binary tree with the help of Preorder and Inorder traversal sequence of the binary tree.
OR
12. (b). What is meant by "Heap"? Explain how "Heap structure" helps in arranging numbers in non-increasing order.
13. (a). Explain any one method of the Implementation of the Dictionary.
OR
13. (b). Explain the open hasing data organization.
14. (a). Illustrate the Quick Sort algorithm to arrange numbers in non-decreasing order and analyze the performance of it.
OR
14. (b). What is meant by merge sort? Explain how merge sort arranges numbers in increasing order. Find the worst case time complexity of it.
15. (a). Explain the procedure of the construction of Maximal Spanning Tree by Prim's method.
OR
15. (b). Illustrate the differences between DFS and BFS.
