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B.E./B.Tech. (Full-Time) DEGREE END SEMESTER EXAMINATIONS
(May 2012)
ELECTRICAL AND ELECTRONICS ENGINEERING BRANCH

Fifth Semester
EE 9305 - Data Structures and Algorithms
[Regulation 2008]

Time: 3 Hrs.

Max. Marks: 100

Answer ALL Questions

PART - A [10 x 2 = 20]

1. State the purpose of the two possible operations on a stack.
2. What do you mean abstract data types?
3. How to store a complete binary tree using an array?
4. Define path and depth with respect to trees.
5. Give the basic step of bubble sort.
6. What do you mean by hashing?
7. State the idea behind greedy algorithms.
8. Give the steps involved in divide and conquer methodology.
9. Differentiate between graphs and trees.
10. How to represent a graph in computers?

PART - B [5 x 16 = 80]

11. i) Give the algorithm for converting a given infix expression into its postfix form. [8]
ii) Explain the operations involved in maintaining a dynamic queue. [8]
12. a) i) What is a binary search tree? State the binary-search-tree property. [6]
ii) Explain any four operations involved in querying a binary search tree. [10]
Or
b) i) Write a note on preliminaries of tree data structures. [6]
ii) Explain pre-order and post-order tree traversals with their algorithms. [10]
13. a) i) State the properties of a heap. [6]
ii) Explain heap sort algorithm with a seven element heap. [10]
Or
b) i) Explain the working of sorting by selection. [8]
ii) How sorting by insertion works on the given array? [8]
14. a) Write a detailed note on backtracking and greedy technique in algorithm design with examples. [16]
Or
b) Explain the working of divide and conquer with an appropriate example. [16]
15. a) i) Write a note on single-source shortest path algorithm. [8]
ii) How all pairs of shortest paths are found? [8]
Or
b) i) State the basic idea behind BFS and DFS. [4]
ii) Explain the working of DFS with an example. [12]

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