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Name of the Candidate:

6329

M.Sc. DEGREE EXAMINATION, 2013

(INFORMATION TECHNOLOGY)

(FIRST SEMESTER)

111: DATA STRUCTURES AND ALGORITHM

December] [Time : 3 Hours

Maximum : 100 Marks

SECTION-A **(8×5=40)**

Answer any EIGHT questions

1. What is stack? Explain its operations.
2. Explain depth first search with an example.
3. Explain merge sort algorithm with an example.
4. Write an algorithm for optimal storage on tapes.
5. Explain post order traversal of a binary tree.
6. What do you mean by bi-connected component? Explain.
7. Explain the graph coloring problem.
8. What are Hamiltonian cycles? Explain.
9. Show that the clique problem is NP complete.
10. What are approximation algorithms? Explain.

SECTION-B **(3×20=60)**

Answer any THREE questions

11. What is a tree? Explain the storage representations and applications of trees.
12. Explain an algorithm to find minimum spanning tree of a given graph.
13. Explain the two approaches to solve a multistage graph problem.
14. Discuss the concept of branch and bound and also explain the procedure for solving a travelling salesman problem using branch and bound technique.
15. Explain any two NP hard graph problems.
