Reg. No.										

B.Sc. DEGREE EXAMINATION, NOVEMBER 2014
Third Semester

BSC1132 – DATA STRUCTURE AND ALGORITHMS
(For the candidates admitted from the academic year 2011-2012 to 2013-2014)

Time: Three hours Max. Marks: 100

Answer **ALL** Questions

PART – A (10 × 2 = 20 Marks)

1. Define Algorithm.
2. Define ADT.
3. What is a priority queue?
4. What is a circular queue?
5. What is a Binary tree?
6. Define Complete binary tree.
7. Define AVL tree.
8. Define Collision resolution.
9. Draw the solution for the 4-Queen problem.
10. Define Back Tracking.

PART – B (5 × 16 = 80 Marks)

11. a. Define Array. Explain the operations of an array.

(OR)

b. How to use stack in solving Tower of Hanoi problem and write an algorithm to solve it?

12. a. Write down the insertion and deletion algorithm for a circular queue.

(OR)

b. What is a doubly linked list? Write down the detailed algorithm for inserting a node to the left and deleting a node from a doubly linked list.

13. a. Explain about Binary Tree Traversal.

(OR)

b. Explain Huffman Algorihm.

14. a. Explain Prim's algorithm to construct a minimum spanning tree from an undirected graph.

(OR)

b. Explain the method of constructing a minimum cost spanning tree using Kruskal's algorithm.

15. a. Explain in detail about branch and bound algorithm design techniques with an example.

(OR)

b. Solve the problem of 8-queens using backtracking approach. Explain every step of the solving process.

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