Code No: 53023 **R09**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY, HYDERABAD
B.Tech II Year I Semester Examinations, December-2014
DATA STRUCTURES THROUGH C++
(Common to CSE, IT)

Time: 3 hours **Max. Marks: 75**

Answer any five questions
All questions carry equal marks
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1.a) With an example, explain the concept of friend functions.
b) Explain about the three types of Parameter passing with suitable examples.

2.a) Explain the concept of runtime polymorphism.
b) What its operator overloading?

3.a) Write an algorithm for inserting and deleting an element from Doubly linked list. Explain.
b) Define a template class stack and implement all possible functionality of a stack.

4.a) Perform the insertion operation using double hashing for the following list. 12, 54, 62, 45, 37, 78, 89, 28, 61, 49.
b) Explain about the skip list representations of dictionary with an example.

5.a) Convert an array of numbers 15, 43, 65, 2, 46, 78, 96, 23, 5, 8 into a maximum heap.
b) Explain how merge sort can be used for external sorting.

6. Build an AVL tree with the following values:
Insertion: 15, 20, 24, 10, 13, 7, 30, 36, 25 and perform following operations
Delete 13 and 25. Searching: 7.

7.a) Describe the B-trees? Explain the advantages of B-Trees.
b) With an example explain the concept of Depth First search.

8.a) How will the KMP algorithms behave if the pattern and/or the text are null (have length zero)? Will they "crash"? If not, will their output be meaningfull and correct.
b) What is Tries? Explain different types of tries.

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