Set No. 4

II B.Tech I Semester Regular Examinations, November 2007
ADVANCED DATA STRUCTURE
(Common to Computer Science & Engineering and Electronics &
Computer Engineering)

Time: 3 hours   Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks
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1. (a) Compare various forms of type cast operations (in C and C++ styles). Tell about overloading of these operations.

   (b) How to set default values of function arguments? What are pros and contras of use of this C++ opportunity? What's its alternative?

   (c) When writing catch operator we can write directly type of exception as a type of its argument, pointer to a type of exception or reference to a type of exception. Compare these approaches. [6+5+5]

2. (a) What is Hybrid inheritance? Write a program to illustrate the concept of Hybrid Inheritance.

   (b) What is single inheritance? Write a program to illustrate the concept of single Inheritance. [8+8]

3. (a) Why should we use iostream instead of the traditional cstdio?

   (b) Why does a program go into an infinite loop when someone enters an invalid input character?

   (c) How can we get std::cin to skip invalid input characters? [5+6+5]

4. Write a C ++ program using stack ADT that reads an infix expression, converts the expression to postfix form and evaluates the postfix expression. [16]

5. (a) What is the structure to represent node in a skip list. Write the constructor for skipList.

   (b) Write a method in C++ to find a pair with key theKey in a dictionary using skip list representation? What is its complexity? [8+8]

6. (a) Explain about the LLr, LRr, LLb, LRb imbalances in a Red-Black tree with example?

   (b) Draw the sequence of rotations required to perform a single right rotation and a double LR rotation in an AVL tree? [8+8]

7. (a) What is the maximum number of disk accesses needed to delete an element that is in a non leaf node of a B-tree of order m?

   (b) Does deleting a leaf node from a red-black tree then reinserting the same key always result in the original tree? Prove it does or given a counter example where it does not. [6+10]

8. (a) Describe about search engine and inverted files.
   (b) Explain the main features of Boyer-Moore algorithm. [10+6]

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