

Code No: 07A3EC15

R07**Set No. 2**

II B.Tech I Semester Examinations, November 2010

ADVANCED DATA STRUCTURES**Common to Electronics And Computer Engineering, Computer Science And Engineering****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
All Questions carry equal marks**

1. Define a splay tree. Write C++ implementation for various operations on splay trees. [16]
2. What is Hashing? Explain Ideal Hashing with suitable examples. [16]
3. (a) Define a precondition a post condition and a member function.
(b) What are the conditions that have to be met for a condition to be an invariant of the class?
(c) What is meant by Stack unwinding? [6+6+4]
4. (a) Explain the need for "Virtual Constructors"
(b) Can we have "Virtual Constructors"? [8+8]
5. Among merge sort, insertion sort, and bubble sort which sorting method is the best in the worst case, justify your answer with an example and analysis. [16]
6. (a) Prove or disprove: A perfectly balanced tree forms if keys 1 to $2^k - 1$ are inserted in order into an initially empty leftist heap.
(b) Given an example of input that generates the best leftist heap. [10+6]
7. (a) Draw the steps required to perform a single right rotation and double LR rotation in an AVL Tree.
(b) What is the minimum number of nodes in an AVL Tree of height 20 [10+6]
8. Elucidate Brute Force pattern matching algorithm with an example. [16]

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R07**Set No. 4**

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(b) Can we have "Virtual Constructors"? [8+8]
3. Define a splay tree. Write C++ implementation for various operations on splay trees. [16]
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5. (a) Define a precondition a post condition and a member function.
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6. What is Hashing? Explain Ideal Hashing with suitable examples. [16]
7. (a) Draw the steps required to perform a single right rotation and double LR rotation in an AVL Tree.
(b) What is the minimum number of nodes is an AVLTree of height 20 [10+6]
8. (a) Prove or disprove: A perfectly balanced tree forms if keys 1 to $2^k - 1$ are inserted in order into an initially empty leftist heap.
(b) Given an example of input that generates the best leftist heap. [10+6]

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R07**Set No. 1**

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R07**Set No. 3**

II B.Tech I Semester Examinations, November 2010

ADVANCED DATA STRUCTURES**Common to Electronics And Computer Engineering, Computer Science And Engineering****Time: 3 hours****Max Marks: 80****Answer any FIVE Questions
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1. (a) Draw the steps required to perform a single right rotation and double LR rotation in an AVL Tree.
(b) What is the minimum number of nodes in an AVL Tree of height 20 [10+6]
2. What is Hashing? Explain Ideal Hashing with suitable examples. [16]
3. Define a splay tree. Write C++ implementation for various operations on splay trees. [16]
4. (a) Prove or disprove: A perfectly balanced tree forms if keys 1 to $2^k - 1$ are inserted in order into an initially empty leftist heap.
(b) Given an example of input that generates the best leftist heap. [10+6]
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