Code No: R05210503 **R05** **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. (a) How does C++ help with the tradeoff of safety vs. usability?
   (b) How to prevent other programmers from violating encapsulation by seeing the private parts of my class?
   (c) Is Encapsulation a Security device? Why?
   (d) What's the difference between the keywords struct and class? [4+4+4+4]
2. (a) Write the program which gives the Destructor for list/chain.
   (b) Write a method to return the index of the first occurrence of an element in a list/chain. [8+8]
3. (a) Describe about search engine and inverted files.
   (b) Explain the main features of Boyer-Moore algorithm. [10+6]
4. (a) Write a program to replace a word with other word in a given file?
   (b) Write a program to count the no of occurrences of a word in a given file ? [8+8]
5. Use linear probing, a hash table with b=17 buckets, and the hash function f(k) = k% b; Start with an empty hash table and insert pairs whose keys are 7, 42, 25, 70, 14, 38, 8, 21, 34, 11. The pairs are inserted in this order.
   (a) Draw the hash table for each insertion?
   (b) What is the loading factor after last insertion?
   (c) What is the maximum number of buckets examined in an unsuccessful search of your table?
   (d) What is the maximum number of buckets examined in a successful search? [4+4+4+4]
6. (a) What is a Binary search tree? Define a C++ abstract class that corresponds to this ADT.
   (b) Write a method to search for an element of a Binary Search Tree? What is its time complexity? [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) Write insertion algorithm of red black tree. Also analyze its time complexity. [6+10]

8. (a) What special considerations do we need to know about when I use Virtual Inheritance?

(b) What special considerations do we need to know about when I inherit from a class that uses virtual inheritance?

(c) What special considerations do I need to know about when I use a class that uses virtual inheritance? [5+5+6]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05210503 **R05** **Set No. 4**

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. (a) What special considerations do we need to know about when I use Virtual Inheritance?
   (b) What special considerations do we need to know about when I inherit from a class that uses virtual inheritance?
   (c) What special considerations do I need to know about when I use a class that uses virtual inheritance? [5+5+6]

2. Use linear probing, a hash table with b=17 buckets, and the hash function f(k) = k% b; Start with an empty hash table and insert pairs whose keys are 7, 42, 25, 70, 14, 38, 8, 21, 34, 11. The pairs are inserted in this order.
   (a) Draw the hash table for each insertion?
   (b) What is the loading factor after last insertion?
   (c) What is the maximum number of buckets examined in an unsuccessful search of your table?
   (d) What is the maximum number of buckets examined in a successful search? [4+4+4+4]

3. (a) Write a program to replace a word with other word in a given file?
   (b) Write a program to count the no of occurrences of a word in a given file ? [8+8]

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

5. (a) How does C++ help with the tradeoff of safety vs. usability?
   (b) How to prevent other programmers from violating encapsulation by seeing the private parts of my class?
   (c) Is Encapsulation a Security device? Why?
   (d) What's the difference between the keywords struct and class? [4+4+4+4]

6. (a) What is a Binary search tree? Define a C++ abstract class that corresponds to this ADT.

(b) Write a method to search for an element of a Binary Search Tree? What is its time complexity? [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) Write insertion algorithm of red black tree. Also analyze its time complexity. [6+10]

8. (a) Write the program which gives the Destructor for list/chain.

(b) Write a method to return the index of the first occurrence of an element in a list/chain. [8+8]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05210503 **R05** **Set No. 1**

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. (a) How does C++ help with the tradeoff of safety vs. usability?
   (b) How to prevent other programmers from violating encapsulation by seeing the private parts of my class?
   (c) Is Encapsulation a Security device? Why?
   (d) What's the difference between the keywords struct and class? [4+4+4+4]
2. (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) Write insertion algorithm of red black tree. Also analyze its time complexity. [6+10]
3. Use linear probing, a hash table with b=17 buckets, and the hash function f(k) = k% b; Start with an empty hash table and insert pairs whose keys are 7, 42, 25, 70, 14, 38, 8, 21, 34, 11. The pairs are inserted in this order.
   (a) Draw the hash table for each insertion?
   (b) What is the loading factor after last insertion?
   (c) What is the maximum number of buckets examined in an unsuccessful search of your table?
   (d) What is the maximum number of buckets examined in a successful search? [4+4+4+4]
4. (a) Write a program to replace a word with other word in a given file?
   (b) Write a program to count the no of occurrences of a word in a given file ? [8+8]
5. (a) Write the program which gives the Destructor for list/chain.
   (b) Write a method to return the index of the first occurrence of an element in a list/chain. [8+8]
6. (a) Describe about search engine and inverted files.
   (b) Explain the main features of Boyer-Moore algorithm. [10+6]
7. (a) What is a Binary search tree? Define a C++ abstract class that corresponds to this ADT.

(b) Write a method to search for an element of a Binary Search Tree? What is its time complexity? [8+8]

8. (a) What special considerations do we need to know about when I use Virtual Inheritance?

(b) What special considerations do we need to know about when I inherit from a class that uses virtual inheritance?

(c) What special considerations do I need to know about when I use a class that uses virtual inheritance? [5+5+6]

⋆ ⋆ ⋆ ⋆ ⋆

Code No: R05210503 **R05** **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
All Questions carry equal marks

⋆ ⋆ ⋆ ⋆ ⋆

1. (a) Write a program to replace a word with other word in a given file?
   (b) Write a program to count the no of occurrences of a word in a given file ? [8+8]

2. (a) What special considerations do we need to know about when I use Virtual Inheritance?
   (b) What special considerations do we need to know about when I inherit from a class that uses virtual inheritance?
   (c) What special considerations do I need to know about when I use a class that uses virtual inheritance? [5+5+6]

3. Use linear probing, a hash table with b=17 buckets, and the hash function f(k) = k% b; Start with an empty hash table and insert pairs whose keys are 7, 42, 25, 70, 14, 38, 8, 21, 34, 11. The pairs are inserted in this order.
   (a) Draw the hash table for each insertion?
   (b) What is the loading factor after last insertion?
   (c) What is the maximum number of buckets examined in an unsuccessful search of your table?
   (d) What is the maximum number of buckets examined in a successful search? [4+4+4+4]

4. (a) How does C++ help with the tradeoff of safety vs. usability?
   (b) How to prevent other programmers from violating encapsulation by seeing the private parts of my class?
   (c) Is Encapsulation a Security device? Why?
   (d) What's the difference between the keywords struct and class? [4+4+4+4]

5. (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) Write insertion algorithm of red black tree. Also analyze its time complexity. [6+10]

6. (a) Write the program which gives the Destructor for list/chain.

(b) Write a method to return the index of the first occurrence of an element in a list/chain. [8+8]

7. (a) What is a Binary search tree? Define a C++ abstract class that corresponds to this ADT.

   (b) Write a method to search for an element of a Binary Search Tree? What is its time complexity? [8+8]

8. (a) Describe about search engine and inverted files.

   (b) Explain the main features of Boyer-Moore algorithm. [10+6]

⋆ ⋆ ⋆ ⋆ ⋆