**16.1Which of the following statements is least true?** If you can code something with fewer keystrokes it is always better software.

**16.2 Which of the following is false for the STL pair class?** The first item in an STL pair is always **const** and cannot be changed

**16.3 Which of the following is true for the STL map iterators?** None of the above (hint, data is accessed in the….)

**17.1 Which of the following statements is false?** Any valid C++ type can be used as the key(first) part of an STL map.

**17.2 what is the order natation to look up student X’s grade in course?**

**O(logs + k)**

**17.3 what is the order notation to make a list of all students who have taken course Y?**

**O(s + k)**

**17.4 Which of the following statement is false about a binary search tree holding the integer 1-10?** If 7 is the parent of 5, then 5 is the right child of 7

**18.1 How many exactly balanced binary search trees exist with the numbers 4.5 9.8 3.5 …**

**1, 7!**

**18.2 Which of the following statements about STL container types is true?** A program that uses an STL set can easily be changed to use an STL map instead, with no performance impact.

**18.3 order notation of find\_smailest function we just wrote,assuming the tree has n nodes in it and a height h. O(h)**

**18.4 assuming the tree has n nodes in it and a height h?**

**O(n)**

**19.1 What is the post-order traversal of this tree?** 1 3 2 5 7 6 4

**19.2 what is the height of the binary search tree that has pre-order traversal 1 2 3 4 5 6 7?** 7

**19.3 what is the traversal order of the destroy\_tree function we wrote earlier?**

**Poster order**

**19.4 What is the sum of the last 4 elements in a breadth first traversal of an exactly balanced binary search tree with the elements 1-7?** 16

**19.5 running time: best: O(n) Average: O(n) Worst:O(n) Memory usuage: Best O(1) Average: O(n) Worst: O(n)**

**19.6 Which of the following statements about tree iterator is false?** If the tree iterator is pointing at the node containing the last element in sorted order, that node must be a leaf node.

**20.3 for the tree with n nodes, for a breadth-first shortest path to leaf node algorithm…?** RT: O(1) O(n) O(n) MU: O(1) O(n) O(n)

**20.4 For either version of the tree iterator operator++ function, for a balanced tree with n elements what is the order notation for the worst case call to operator++….?** S\_wor: O(logn) S\_avg: O(1) total: O(n)

**21.1: 2,4&7**

**21.2 Which of the following statement about operator overloading is true?** If a member function takes in as an argument a second object of the class type, it has access to the private member variable of both the “this” object and the argument object.

21.3 is false? You can overload operators for every symbol on your keyboard