CIS 121 - Quiz 12 - Wednesday, July 23, 2003

Name: ___________________________ StudentNumber: ___________________________

1. (2 pts) Suppose we wish to create a Stack using a Linked List and want to insert new elements at the beginning of the list. What is wrong with the following method? How would you fix it? Assume that there is a class definition called Node, and an instance variable called head in the Linked List definition of type Node and the constructor accepts an Object and a reference to a Node.

        public void add(Object o) {
            head = new Node(o, null);
        }

2. (2 pts) If we store elements in a structure and take elements out from the same point in the structure where we add them, what data structure are we implementing?

3. (2 pts) A Queue is a __________________________ data structure since the last element we place in the queue in the last element we take out of the queue.

4. (2 pts) The __________________________ of a Hashtable is the ratio of the number of occupied cells to the total number of cells, and if this ratio is large, there is a greater chance of a __________________________.

5. (2 pts) Suppose we add the following numbers in order to an empty binary search tree. 10 15 6 12 1 5 17. Show the contents of the tree.