**Chapter 12 Concept Quiz**

Determine whether each of the following statements is true or false. If a statement is false, please explain why.

1. A stack is an ADT for an ordered collection of items that has the feature of First In First Out.
2. For stack ADT, you can add/remove at both ends.
3. In Java, OutOfMemoryError is thrown when runtime stack runs out of memory.
4. For stack ADT, you can’t insert an item in the middle using push() operation.
5. For pop() operation in a Capacity-Bounded Stack implemented with an Array, it “empty out” the array contents at the “topmost” index.
6. To iterate through an instance of a stack class using a for-each loop, the stack class needs to implement Iterable interface.
7. When an attempt to access a “next” element that does not exist for a stack class implemented with Iterable interface, NoSuchElementException can be thrown.
8. Infix notation is Reverse Polish Notation.
9. stack isn’t a useful data structure when we need to keep track of a sequence and then reverse it such as backtracking.
10. The postfix expression for (3 \* (5 + 2)) – 9 is 3 5 2 \* + 9 –.

**Answers to the Quiz**

1. **False**. A stack is an ADT for an ordered collection of items that has the feature of Last In First Out.
2. **False**. For stack ADT, you can only access at one end: the top.
3. **False**. In Java, StackOverflowError is thrown when runtime stack runs out of memory.
4. **True**.
5. **False**. For pop() operation in a Capacity-Bounded Stack implemented with an Array, it does not “empty out” the array contents at the “topmost” index
6. **True**.
7. **True**.
8. **False**. Postfix notation is Reverse Polish Notation
9. **False**. stack is a useful data structure when we need to keep track of a sequence and then reverse it such as backtracking
10. **False.** Thepostfix expression for (3 \* (5 + 2)) – 9 is 3 5 2 + \* 9 –.