Short Answer (3 Points)

1.) A(n) **map** data structure creates an association between a key and a value, and may be implemented with a hash.

2.) **generics / type variables** allow the compiler to perform compile-time checks for type-safety, and eliminate the need for class casts.

3.) A class’ **API** can be described as the set of public fields and methods the class makes available to a programmer.

True or False (5 Points - Please circle your answer)

4.) **(True / False)** - A variable of type T can be added to a LinkedList<? super T>, but not to a LinkedList<? extends T>.

*Rationale: We don't know what type is in the list, but we know that it is some super type of T. This means that whatever is in the list is more generic than T, meaning we can safely insert a T.*

5.) **(True / False)** - The following assignment is legal, because String is a subclass of Object.

   LinkedList<Object> objectList = new LinkedList<String>();

*Rationale: The assignment above would then let an Object be inserted into a LinkedList<String>, which we don't want. When it comes to type variables, throw all that you know about inheritance out the window, unless you're dealing with bounded types (? extends T, etc)*

6.) **(True / False)** - Anonymous inner classes are the only type of class that can inherit a constructor.

7.) **(True / False)** - An anonymous inner class must extend a class or implement an interface.

8.) **(True / False)** - The default LayoutManager of a JFrame is FlowLayout.

*Rationale: The default LayoutManager of a JFrame is BorderLayout*

Multiple Choice (2 Points - Please circle your answer)

9.) The most logical LayoutManager for a simple calculator GUI would be:

   a.) BorderLayout
   b.) GridLayout
   c.) FlowLayout
10.) When writing event handlers for our swing GUIs, we use classes in the java.awt.event package because:
   a.) Event classes in AWT are more robust cross-platform than their swing counterparts.
   b.) Event classes have no graphical representation, thus, are not present in swing.
   c.) Swing's event model is only used for non-windowed applications.