Chapter 22

Section 22.1

22.1 Q1: Which of these is not an example of a "real-life" collection?
   a. The cards you hold in a card game.
   b. Your favorite songs stored in your computer.
   c. The players on a soccer team.
   d. The number of pages in a book.
ANS: d. The number of pages in a book.

22.1 Q2: The Java collections __________ provides standardized collections intended for broad reuse.
   a. Frameset.
   b. Framework.
   c. Framegroup.
   d. Frametable.
ANS: b. Framework.

Section 22.2

22.2 Q1: Which statement is false?
   a. A collection is an object that can hold references to other objects.
   b. The collection interfaces declar the operations that can be performed on each type of collection.
   c. Unfortunately, collections discourage software reuse because they are non-portable.
   d. Collections are carefully constructed for rapid execution and efficient use of memory.
ANS: c. Unfortunately, collections discourage software reuse because they are non-portable.

22.2 Q2: The classes and interfaces which comprise the collections framework are members of package ________.
   a. java.util.
   b. javax.swing.
   c. java.collections.
   d. java.collection.
ANS: a. java.util.

Section 22.3

22.3 Q1: The public set of methods through which collections are manipulated is called a(n) __________.
   a. Interface.
   b. Package.
   c. View.
   d. Type wrapper.
ANS: c. View.

22.3 Q2: Class Arrays provides method __________ for comparing arrays.
   a. compare.
   b. compares.
   c. equal.
   d. equals.
ANS: d. equals.

Section 22.4

22.4 Q1: The primary difference between an Iterator and an Enumeration is that __________.
   a. Enumerations can remove elements; Iterators cannot.
   b. Enumerations can work on dynamically resizable collections; Iterators cannot.
   c. Iterators can remove elements; Enumerations cannot.
   d. There is no difference between them.
ANS: c. Iterators can remove elements; Enumerations cannot.
22.4 Q2: Interface **Collection** contains __________ operations (i.e., operations performed on the entire collection).
   a. aggregate.
   b. composite.
   c. integral.
   d. bulk.
ANS: d. bulk.

Section 22.5

22.5 Q1: Which statement is false?
   a. A **List** is an ordered **Collection**.
   b. A **List** cannot contain duplicate elements.
   c. A **List** is sometimes called a sequence.
   d. Lists are zero based.
ANS: b. A **List** cannot contain duplicate elements.

22.5 Q2: Which statement is false?
   a. A **ListIterator** accesses the elements of a **List**.
   b. Class **ArrayList** is a fixed-size array.
   c. A **LinkedList** is a linked list implementation of a **List**.
   d. **ArrayLists** execute faster than **Vectors** because they are not thread safe.
ANS: b. Class **ArrayList** is a fixed-size array.

Section 22.6

22.6 Q1: The collections framework algorithms are __________, i.e., each of these algorithms can operate on objects that offer given interfaces without concern to the underlying implementations.
   a. Stable.
   b. Lexicographical.
   c. Polymorphic.
   d. Implementation dependent.
ANS: c. Polymorphic.

Section 22.6.1

22.6.1 Q1: Algorithm **sort** uses a _____ sort (i.e., one that does not reorder equivalent elements while sorting).
   a. Stable.
   b. Unstable.
   c. Fixed.
   d. **const**.

22.6.1 Q2: Lexicographical comparison sorts a list of **Strings** by __________.
   a. Order of insertion.
   b. Data type.
   c. Length.
   d. The Unicode values that represent each character in the **Strings** being compared.
ANS: d. The Unicode values that represent each character in the **Strings** being compared.

Section 22.6.2

22.6.2 Q1: Algorithm __________ randomly orders a **List**'s elements.
   a. random.
   b. random sort.
   c. distribute.
   d. shuffle.
ANS: d. shuffle.
22.6.2 Q2: Method shuffle is part of __________.
   a.Class Arrays.
   b.Class Collections.
   c.Interface Collection.
   d.Interface List.
ANS: b. Class Collections.

Section 22.6.3

22.6.3 Q1: Class Collections provides algorithms for reversing, filling and copying ________.
   a.Lists.
   b.Collections.
   c.Arrays.
   d.Stacks.

22.6.3 Q2: To find the smallest and largest element of a Collection, use Collections methods ________ and ________.
   a.least, greatest.
   b.small, large.
   c.first, last.
   d.min, max.
ANS: d. min, max.

Section 22.6.4

22.6.4 Q1: If the desired Object is not found, binarySearch returns ________.
   a.A positive value
   b.Zero
   c.A negative value
   d.An ObjectNotFoundError.
ANS: c. A negative value.

22.6.4 Q2: Which statement is false?
   a.Java does not guarantee which item will be found first when a binarySearch is performed on a List containing multiple elements equivalent to the search key.
   b.If the search key is found, method binarySearch returns the List index (position relative to 1) of the element containing the search key.
   c.The binary search algorithm is fast.
   d.Method binarySearch takes a List as the first argument.
ANS: b. If the search key is found, method binarySearch returns the List index (position relative to 1) of the element containing the search key.

Section 22.7

22.7 Q1: ________ methods enable a program to view a portion of a collection.
   a.Focus-view.
   b.Range-view.
   c.Delimiter-view.
   d.Subset-view.
ANS: b. Range-view.

22.7 Q2: Which statement is false?
   a.SortedSet extends Set.
   b.Class SortedSet implements TreeSet.
   c.When a HashSet is constructed, it removes any duplicates in the Collection.
   d.By definition, a Set object does not contain any duplicates.
ANS: b. Class SortedSet implements TreeSet.
Section 22.8

22.8 Q1: Maps allocate keys to values and cannot contain duplicate keys, i.e., the key-to-value mapping is a __________ mapping.
   a. Many-to-many.
   b. Many-to-one.
   c. One-to-many.
   d. One-to-one.
ANS: d. One-to-one.

22.8 Q2: _________ is not a Map method.
   a. getKey.
   b. size.
   c. put.
   d. isEmpty.
ANS: a. getKey.

Section 22.9

22.9 Q1: Which statement is false?
   a. All built-in collections are synchronized.
   b. Concurrent access to a Collection by multiple threads could cause indeterminate results or fatal errors.
   c. To prevent potential threading problems, synchronization wrappers are used around collection classes that might be accessed by multiple threads.
   d. A synchronization wrapper class receives method calls, adds some functionality for thread safety and then delegates the calls to the wrapped class.
ANS: a. All built-in collections are synchronized.

Section 22.10

22.10 Q1: Which statement is false?
   a. The Collections API provides a set of public static methods for converting collections to unmodifiable versions.
   b. Unmodifiable wrappers throw ModificationExceptions if attempts are made to modify the collection.
   c. You can use an unmodifiable wrapper to create a collection that offers read-only access to others while allowing read-write access to yourself.
   d. You can create the kind of collection mentioned in part (c) simply by giving others a reference to the unmodifiable wrapper while you also retain a reference to the wrapped collection itself.
ANS: b. Unmodifiable wrappers throw ModificationExceptions if attempts are made to modify the collection.

Section 22.11

22.11 Q1: The collections framework provides various _________ implementations collection interfaces from which the programmer can quickly "flesh out" complete customized implementations.
   a. Abstract.
   b. Concrete.
   c. Structured.
   d. Unstructured.

22.11 Q2: Which of the following is not an abstract implementation provided by the collections framework?
   a. AbstractCollection.
   b. AbstractTree.
   c. AbstractMap.
   d. AbstractList.
ANS: b. AbstractTree.