MT study guide

1. Look at the following code.

Integer myNumber = new Integer(5);

int var = myNumber;

What is true about the second statement?

1. The statement performs autoboxing.
2. It results in an error because you can’t assign a wrapper class to a primitive variable.
3. **The statement performs unboxing.**
4. The statement performs unwrapping.

2. If ClassA is derived from ClassB, then

a. **Public members in ClassB are public in ClassA, but private members in ClassB cannot be**

**directly accessed in ClassA**

b. Public and private members of ClassB are public and private, respectively, in ClassA

c. Neither public or private members in ClassB can be directly accessed in ClassA

d. Private members in ClassB are changed to protected members in ClassA

3. A search for an item X in a portion of a sorted array works by repeatedly selecting the middle

item and comparing it to X. If X is not found there, the search method selects either the portion

of the array to the left of the middle item, or the portion of the array to the right of the middle item,

and continues the search. This method is called

1. **binary search** b. sequential search c. selection search d. None of the responses are valid

4. The generic method

public static <E extends Number>

void displayArray(E[] array) {

for (E element : array)

System.out.println(element);

}

can be passed

1. an array whose element type is E
2. an array whose element type is Object
3. **an array whose element type is Integer**
4. an array whose element type is any superclass of Number

5.When applied to an array a[ ] of integers, the pseudo code

Boolean sort = true

int k = 0

While sort == true and k < a.length-1

If a[k] > a[k+1] Then

sort = false

End If

k = k +1

End While

a. will sort the array a[ ] in ascending (nondecreasing) order

**b. will determine if the array is arranged in ascending order**

c. will determine if the array is arranged in descending order

d. will sort the array a[ ] in descending (nonincreasing) order

Essay

1. What are some benefits using an ArrayList over an array? Name at least two.

2. What are some differences between an abstract class and an interface?

3. What is the primary differnece between a singly LinkedList versus a double LinkedList?

4. What are distinct advantages of an ArrayList over a double LinkedList? What are any disdvantages of the Arraylist over the double LinkedList?

5. Explain the steps in detail how to reverse any ArrayList that may contain Numeric values.

Coding exercises

1. Create and define a method called popList that gets passed an arraylist called list that will accept any numeric value type passed in. The method definition should assign 5 integers to the arraylist via a loop storing the values of 1,2,3,4 and 5 respectively.

1. Code a comparator called MyComparator that has 2 multilevel sorts, one by a sex field and one by an income field. Assume the comparator must implement or override the supertype BankRecords.