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Quiz 3 for Lesson 8-12

I. Circle the right choice.

[1 point each]

1. Java's TreeSet and TreeMap classes implemented the balanced tree which is called _____

- a) AVL Trees ☒ b) Red-Black Trees c) 2-3-4 Trees d) Expression Trees

2. An object that is for a RuntimeException is an Exception. The converse is also true. This statement is true or false.

- a) True ☒ b) False

3. What is the output of the given code?

```
public class Test {  
    public static void main(String[] args) {  
        HashSet obj = new HashSet();  
        obj.add("Hello");  
        if(obj.add("Hello"))  
            System.out.println(true);  
        else  
            System.out.println(false);  
    }  
}
```

- a) true ☒ b) false c) Run time Error d) Compile time error

4. Integer[] input = { 10, 15, 12, 11, 13 };

Which one of the following statement gives the sorted elements for the given input?

- ☒ a) Arrays.sort(input) b) Collections.sort(input)

5. Which one can be used to assure program correctness during the testing and avoid logic errors?

- a) Exceptions ☒ b) Assertions

6. Which one of these interfaces must contain a unique element?

- ☒ a) Set b) List c) Queue d) AbstractList

7. What is the output of the given code?

```
Stack<Integer> stack = new Stack<Integer>();  
stack.push(5);  
stack.push(6);  
stack.push(7);  
System.out.println( stack.peek() + " " + stack.pop());
```

- a) 5 5 b) 5 6 ☒ c) 7 7 d) 7 6

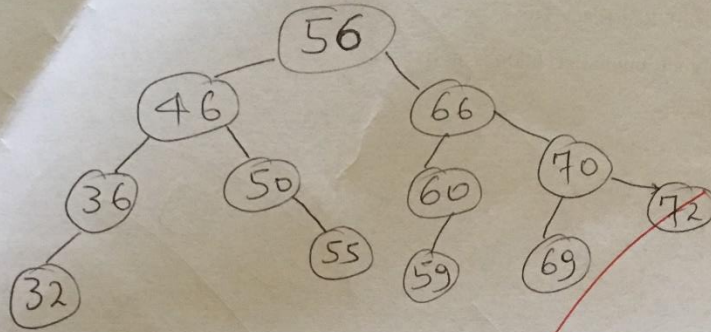
II. Answer the following questions

8. Construct a Binary Search Tree for the given set of elements and perform tree traversal.

a) Construct a Binary Tree.

[5 Points]

Set of inputs are: [56 46 36 66 50 32 60 70 55 59 72 69]



b) Write Pre-order traversal ^{VLR} 56, 46, 36, 32, 50, 55, 66, 60, 59, 70, 69, 72

c) Write Post-order traversal ^{LRV} 32, 36, 55, 50, 46, 59, 60, 69, 72, 70, 66, 56

9. Fill the answers in the table according to the given aspects. Your answer should be Yes or No. No other words allowed.

[4 Points]

Feature	java.util.HashMap	java.util.Hashtable
Allows null key	YES	No
Allows null values	YES	No
Allows duplicate keys	No	No
Synchronized (for safe multithreading)	No	YES

10. Match the suitable exception for the given code. [4 Points]

[ClassCastException, ArrayIndexOutOfBoundsException, NumberFormatException, NullPointerException, InputMismatchException, ClassNotSupportedException]

```
public class MatchException {  
    public static void main(String args[]) {  
        Object o = null;  
        System.out.println(o.toString());  
    }  
}
```

Answer: NullPointerException

```
public class MatchException {  
    public static void main(String args[]) {  
        Object o = new Object();  
        String s = (String)o;  
    }  
}
```

Answer: ClassCastException

```
public class MatchException {  
    public static void main(String args[]) {  
        String s = "Java";  
        int i = Integer.parseInt(s);  
        System.out.println(i);  
    }  
}
```

Answer: NumberFormatException

```
public class MatchException {  
    public static void main(String args[]) {  
        int[] x = new int[5];  
        System.out.println(x[5]);  
    }  
}
```

Answer: ArrayIndexOutOfBoundsException