Started on	Wednesday, 10 March 2021, 10:54 PM
State	Finished
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Time taken	36 mins 22 secs
Grade	**18.00** out of 20.00 (**90**%)

Question **1**

Correct

Mark 1.00 out of 1.00

Fill in the blanks in the following statement:

A Binary Search Tree can be represented as a _____ and has _____ children.

Select one:

Select one:

- a. linked data structure, at most two children ✔
- b. non-linked data structure, two or more children
- c. linked data structure, two children
- d. doubly linked list, two children

Your answer is correct.

The correct answer is: linked data structure, at most two children

Question **2**

Correct

Mark 1.00 out of 1.00

In JUnit version 4, if you want to execute the method A after each test, you have to _____

Select one:

Select one:

- a. annotate the method A with @AfterClass
- b. annotate the method A with @After ✔
- c. annotate the method A with @Before
- d. annotate the method A with @Test

Your answer is correct.

The correct answer is: annotate the method A with @After

In JUnit version 4, to inform the JUnit testing system that a method is a test that should be carried out you have to _____

Select one:

Select one:

- a. use the annotation @Test ✔
- b. use the annotation @Before
- c. make the method a "static void" method
- d. call "assertTest" in the method's body

Your answer is correct.

The correct answer is: use the annotation @Test

Question **4**

Correct

Mark 1.00 out of 1.00

Which one of the following statements is INCORRECT in a Binary Search Tree?

Select one:

Select one:

- a. The sucessor of a given node is the smallest key greater than the key of the given node.
- b. Keys can be sorted
- c. The sucessor of the largest key is NULL.
- d. Binary Search Trees do not support dynamic data set operations ✔

Your answer is correct.

The correct answer is: Binary Search Trees do not support dynamic data set operations

Which one of the following statements is CORRECT?

Select one:

- a. The smallest key is not necessarily a leaf in a heap
- b. In a binary search tree, x.left.key ≤ x.right.key ✔
- c. In a heap, x.left.key ≤ x.right.key
- d. Heap is a binary search tree

Your answer is correct.

The correct answer is:
In a binary search tree, x.left.key ≤ x.right.key

Question **6**

Correct

Mark 1.00 out of 1.00

Consider the following code

```
someMethod(boolean a, boolean b, boolean c){
  if(a){  statementX;
   }else{
     statementY;
    if(b) statementZ;
    if(c) statementW;
  }
}
```

Which one of the following statements is INCORRECT?

Select one:

- a. The minimum of test cases for path completeness is 5.
- b. The minimum of test cases for statement completeness is 2.
- c. The maximum of test cases for path completeness is 8.
- d. The minimum of test cases for branch completeness is 4. ✔

Your answer is correct.

The correct answer is:
The minimum of test cases for branch completeness is 4.

Which one of the following statements is CORRECT?

Select one:

- a. The nodes in an Octree are sorted according to the values ✖ Octree can be used to store 3D spatial data (including 2D data)
- b. Octree can be used to store 2D spatial data
- c. A node in an Octree can have a fractional value between 0 and 1
- d. An Octree can have at most 8 leaves

Your answer is incorrect.

The correct answer is:
Octree can be used to store 2D spatial data

Question **8**

Correct

Mark 1.00 out of 1.00

Given a binary search tree with keys ranging from 1 to 100, which path is a possible sequence when searching for the key "50"?

Select one:

Select one:

- a. 40 – 60 – 45 – 48 – 50 ✔
- b. 40 – 10 – 45 – 30 – 50
- c. 42 – 60 – 20 – 48 – 50
- d. 42 – 60 – 20 – 30 – 50

Your answer is correct.

The correct answer is: 40 – 60 – 45 – 48 – 50

[Discarded] Which one of the following statements is CORRECT?

Select one:

- a. A Bloom filter always returns negative for a member is not in a set of strings represented by the Bloom filter ✔
- b. An n-bit Bloom filter needs n hash functions
- c. Bloom filter is exact representation of a set of strings
- d. A member that is in a set of strings can still be returned as not a member in a Bloom filter that represents the set of strings

Your answer is correct.

The correct answers are:
Bloom filter is exact representation of a set of strings,

A member that is in a set of strings can still be returned as not a member in a Bloom filter that represents the set of strings,

A Bloom filter always returns negative for a member is not in a set of strings represented by the Bloom filter,

An n-bit Bloom filter needs n hash functions

Question **10**

Correct

Mark 1.00 out of 1.00

In JUnit version 4, if you want to execute the method A after all tests in a class, you have to _____

Select one:

Select one:

- a. annotate the method A with @Before
- b. annotate the method A with @AfterClass ✔
- c. annotate the method A with @After
- d. annotate the method A with @Test

Your answer is correct.

The correct answer is: annotate the method A with @AfterClass

Which one of the following statements about code coverage is INCORRECT?

Select one:

- a. It is not possible to achieve 100% path coverage without 100% branch coverage
- b. It is not possible to achieve 100% statement coverage without 100% path coverage ✔
- c. It is possible to achieve 100% branch coverage without 100% path coverage
- d. It is possible to achieve 100% statement coverage without 99% path coverage

Your answer is correct.

The correct answer is:
It is not possible to achieve 100% statement coverage without 100% path coverage

Question **12**

Correct

Mark 1.00 out of 1.00

Fill in the blank in the following statement: _____ checks whether each function within the implementation is working correctly. (Building the thing right).

Select one:

Select one:

- a. Validation
- b. Authentication
- c. Verification ✔
- d. Confirmation

Your answer is correct.

The correct answer is: Verification

Which one of the following statements is INCORRECT?

Select one:

- a. Count-min sketch can solve the heavy hitter problem with a constant size of memory space
- b. Count-min sketch may produce errors in the number of occurrences of an item
- c. Count-min sketch can track the number of occurrences of an item without knowing the number of distinct items
- d. Count-min sketch can track the number of occurrences of the least frequent item better than that of the most frequent item ✔

Your answer is correct.

The correct answer is:
Count-min sketch can track the number of occurrences of the least frequent item better than that of the most frequent item

Question **14**

Correct

Mark 1.00 out of 1.00

In JUnit version 4, if you want to execute the method A before all tests in a class, you have to _____

Select one:

Select one:

- a. annotate the method A with @BeforeClass ✔
- b. annotate the method A with @Test
- c. annotate the method A with @After
- d. annotate the method A with @Before

Your answer is correct.

The correct answer is: annotate the method A with @BeforeClass

In JUnit version 4, if you want to execute the method A before each test, you have to _____

Select one:

Select one:

- a. annotate the method A with @Before ✔
- b. annotate the method A with @BeforeClass
- c. annotate the method A with @After
- d. annotate the method A with @Test

Your answer is correct.

The correct answer is: annotate the method A with @Before

Question **16**

Correct

Mark 1.00 out of 1.00

Fill in the blanks in the following statement: Testing _____ "prove" code to be correct, however, it does provide confidence that the code is correct and it will _____ uncover problems within code.

Select one:

Select one:

- a. will, always
- b. will, often
- c. will not, always
- d. will not, often ✔

Your answer is correct.

The correct answer is: will not, often

Mark 1.00 out of 1.00

Fill in the blank in the following statement: _____ certifies that the system meets the requirements (Building the right thing).

Select one:

Select one:

- a. Validation ✔
- b. Authentication
- c. Confirmation
- d. Verification

Your answer is correct.

The correct answer is: Validation

Question **18**

Correct

Mark 1.00 out of 1.00

Which one of the following statements is INCORRECT?

Select one:

Select one:

- a. The concepts behind data structures are valid to any other programming language.
- b. The traversal in linear data structures is sequential.
- c. The inorder traversal method in a Binary Search Tree (BST) is only possible because BSTs use linear data structures. ✔
- d. Queue is an example of a linear data structure.

Your answer is correct.

The correct answer is: The inorder traversal method in a Binary Search Tree (BST) is only possible because BSTs use linear data structures.

Mark 1.00 out of 1.00

Fill in the blank in the following statement: Traversing a tree from the root is useful for printing out the data or applying some operation in a tree following a particular order. The post-order traversal method _____.

Select one:

Select one:

- a. visits the root, traverses the left subtree, and then traverses the right subtree.
- b. traverses the left subtree and then traverses the right subtree only.
- c. traverses the left subtree, traverses the right subtree, and then visits the root. ✔
- d. traverses the left subtree, visits the root and then traverses the right subtree.

Your answer is correct.

The correct answer is: traverses the left subtree, traverses the right subtree, and then visits the root.

Question **20**

Incorrect

Mark 0.00 out of 1.00

Which one of the following statements is INCORRECT?

Select one:

- a. No two distinct items can be mapped to the same index by a collision-resistant hash function
- b. A hash function deterministically assigns an item to an index
- c. An array can be used to resolve collisions ✖ The incorrect statement is "No two distinct items can be mapped to the same index by a collision-resistant hash function". In a collision-resistant hash function, each item has a uniform probability to be mapped to any one of the indexes
- d. Randomized strategy can improve collision-resistance of a hash function

Your answer is incorrect.

The correct answer is:
No two distinct items can be mapped to the same index by a collision-resistant hash function

◄ Lecture 13. Intellectual Property

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Quiz 2 ►