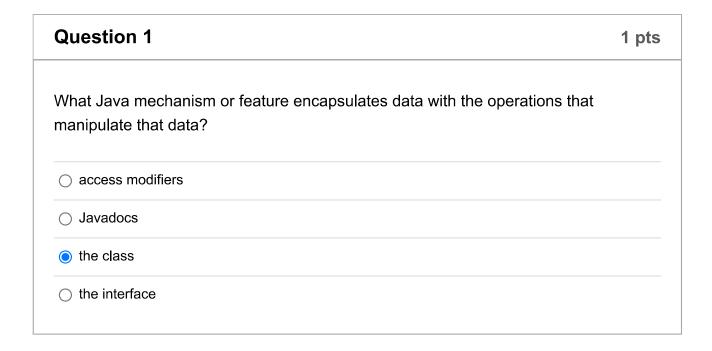# Final 1 Module A 2020

Started: Dec 11 at 8:33pm

Quiz Instructions

The questions on this quiz are based mainly on:

- Module 7 - Design (especially chapter 9 and chapter 11 slides)
- Module 10 - Testing (especially the slides)
- Module 11 - Formal Reasoning (especially the slides and recordings)

There may also be a couple questions from the first half of the course.

Question 1	1 pts

What Java mechanism or feature encapsulates data with the operations that manipulate that data?

○ access modifiers

○ Javadocs

◉ the class

○ the interface

Question 2	1 pts

Since modularity is an important design goal it is not possible to have too many modules in a proposed design.

○ True

◉ False

Question 3   1 pts

Coupling is a qualitative indication of the degree to which a module

○ can be written more compactly.

○ focuses on just one thing.

○ is able to complete its function in a timely manner.

◉ is connected to other modules and the outside world.

Question 4   1 pts

What should you focus on when refactoring?

○ Enhancing functionality

○ Fixing bugs

○ Optimizing performance

◉ Strengthening design

Question 5   1 pts

Which of the following is NOT an important property for a component?

◉ It should be Abstract

○ It should be Deployable

○ It should be Modular

○ It should be Replaceable

Question 6   1 pts

A component should be usable solely on the basis of its specification.

⦿ True

◯ False

Question 7   1 pts

What design principle states that "a module should be open for extension, but closed for modification"?

◯ The Dependency Inversion Principle

◯ The Interface Segregation Principle

◯ The Liskov Substitution Principle

⦿ The Open-Closed Principle

Question 8   1 pts

Consider a binary-search method in an array that reports whether an object is in the array. The documentation indicates that the caller must pass in a sorted array or the results are unspecified. According to strict design-by-contract, who is responsible for checking that the array is sorted?

◯ Client caller

⦿ Class implementer

◯ Both the client and the implementer

◯ Neither the client nor the implementer

Question 9   1 pts

Occurs when components use the same global variable

- 🔘 Common coupling
- ⚪ Content coupling
- ⚪ Global coupling
- ⚪ Routine coupling

Question 10   1 pts

Which of the following is considered the most harmful kind of coupling?

- ⚪ Common coupling
- 🔘 Content coupling
- ⚪ Routine call coupling
- ⚪ Type-use coupling

Question 11   1 pts

A good test is one that has a high probability of finding an error.

- 🔘 True
- ⚪ False

Question 12   1 pts

Who should be testing the software?

- ○ An independent tester only

- ● Both the developer and an independent tester

- ○ Neither the developer nor an independent tester

- ○ The developer only

Question 13   1 pts

What is the difference between verification and validation?

- ○ verification looks at acceptance tests, while validation looks at unit tests

- ● verification looks at whether you are constructing the system correctly, while validation looks at whether the system you are building is what the customer really wants

- ○ verification uses black-box testing, and validation uses white-box testing

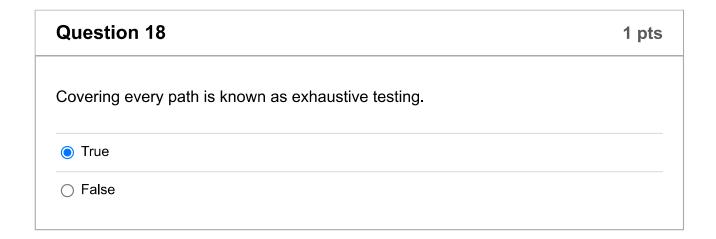- ○ verification uses formal reasoning, and validation uses testing

Question 14   1 pts

Regression testing is a specific kind of

- ○ Acceptance testing

- ● Integration testing

- ○ Performance testing

- ○ System testing

Question 15   1 pts

Recovery testing is a system test that forces the software to fail in a variety of ways and verifies that software is able to continue execution without interruption.

○ True

◉ False

Question 16   1 pts

The most likely place that errors occur is in

◉ boundary cases

○ code that is frequently used

○ code with high cyclomatic complexity

○ exceptions

Question 17   1 pts

The testing technique that requires devising test cases to demonstrate that each program function is operational is called

◉ black-box testing

○ glass-box testing

○ grey-box testing

○ white-box testing

Question 18   **1 pts**

Covering every path is known as exhaustive testing.

◉ True

○ False

Question 19   **1 pts**

The flow graph construct for iterative code consists of

◉ one predicate node and one non-predicate node

○ one predicate node and two non-predicate nodes

○ two non-predicate nodes

○ two predicate nodes

Question 20   **1 pts**

What is the cyclomatic complexity of the following code?

```
int x = 0;
while (condition) {
    x = x + 1;
}
System.out.println(x);
```

○ 0

○ 1

◉ 2

○ 3

Question 21   1 pts

Which of the following is NOT a benefit of formal specifications?

◉ They are easier to write and read than informal specifications

○ They are more concise than informal specifications

○ They are precise and unambiguous

○ They can be understood by computer programs

Question 22   1 pts

To prove that a program's implementation is correct with respect to its specification, a verifying compiler must run the program.

○ True

◉ False

Question 23   1 pts

To prove that a program is correct, a verifier must first generate facts and obligations, and then it must use the facts to prove the obligations.

◉ True

○ False

Question 24   1 pts

Under time-boxing, which of the following are acceptable options if you realize in the middle of an iteration that you cannot deliver the required functionality?

○ De-Scope (cut back on the functionality you deliver)

◉ Deliver alpha software and work out the bugs in a subsequent iteration

○ Push back the delivery date

○ Either de-scope or push back the delivery date

Question 25   1 pts

Which of the following is NOT a principle of agile development?

◉ All tests should be traceable to customer requirements

○ Deliver working software frequently

○ Sponsors, developers, and users should be able to maintain a constant pace indefinitely

○ The most efficient and effective method of conveying information if face-to-face conversation

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Quiz saved at 9:00pm   Submit Quiz