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Practice exam

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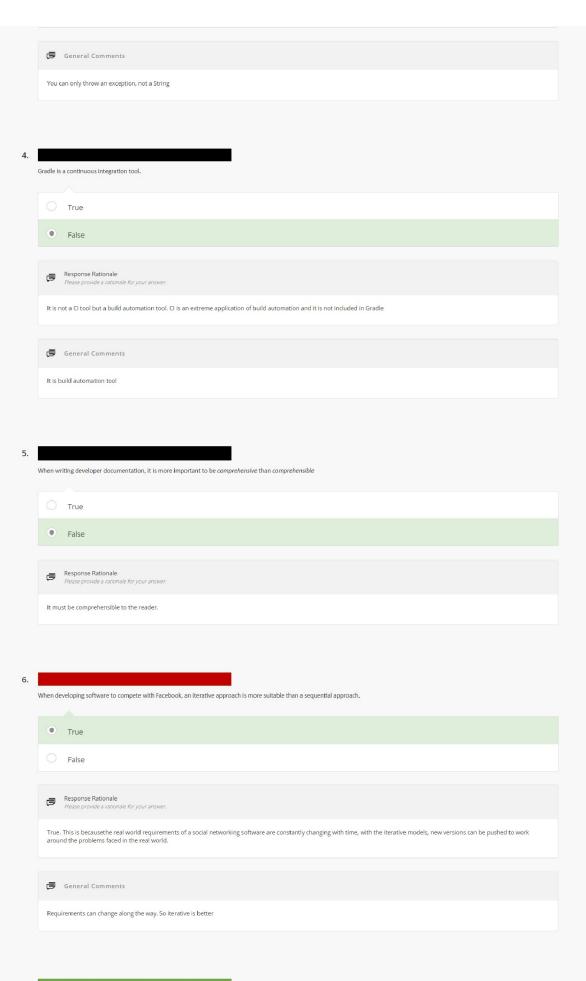


Section1

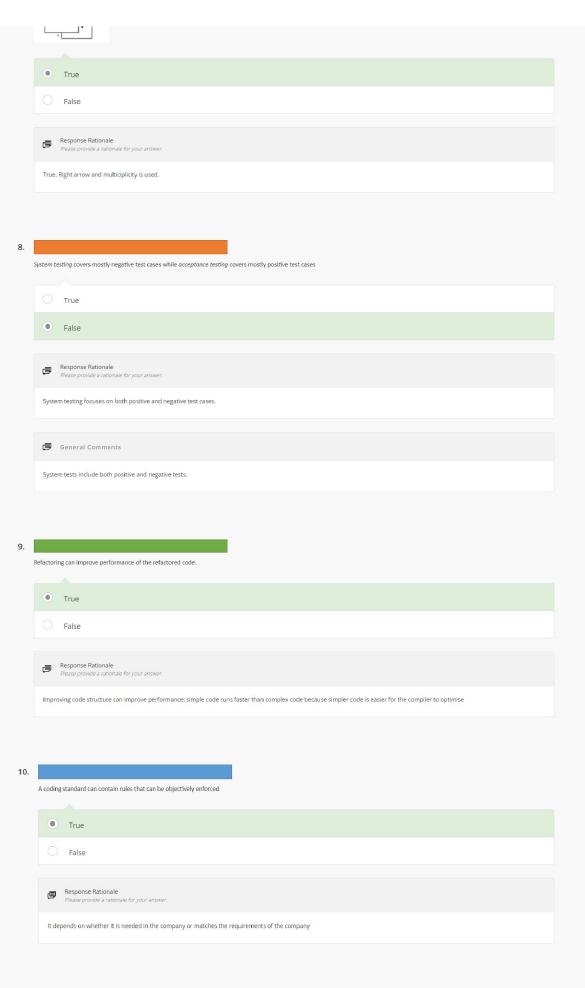
Using the justification field is OPTIONAL in this section. You can make note of you made in answering the question in the justification field.

| | gnore the colored bar at the top of the page. | | | |
|----|--|--|--|--|
| 1. | | | | |
| | The module TP uses both CI and CD. | | | |
| | | True | | |
| | • | False | | |
| | | | | |
| | = | Response Rationale Please provide a rationale for your answer. | | |
| | Integration, building and testing does not happen automatically after each code change | | | |
| | P | | | |
| | | General Comments | | |
| | Only | u e e e e e e e e e e e e e e e e e e e | | |
| | | | | |
| 2. | | | | |
| | Metho | d overloading can happen within a single class. | | |
| | • | True | | |
| | | False | | |
| | | Response Battingsis | | |
| | <u></u> | Response Rationale Please provide a rationale for your answer. | | |
| | True | . You can have more than one methods with different parameters. | | |
| | | | | |
| 3. | | | | |
| | The code | e below compiles | | |
| | | <pre>void bar(boolean isValid) throws Exception{ if(!isValid){</pre> | | |
| | | <pre>throw new String("Invalid data"); } }</pre> | | |
| | | | | |
| | | True | | |
| | 0 | False | | |
| | P | Response Rationale | | |
| | (<u>—</u> | Please provide a rationale for your answer. | | |

Exception and not a string should be thrown.



This is a correct usage of $\it composition$ to represent the fact that a Task may consist of smaller Tasks



| | • True |
|-----|--|
| | O False |
| | Response Rationale Please provide a rationale for your answer, |
| | True, it is an example of static analysis as the code is flagged out before compiling the code eg unused variables |
| | |
| 12. | |
| | This is a valid functional requirement: "The quiz should be accessible to 250 students concurrently" |
| | O True |
| | • False |
| | Response Rationale Please provide a rationale for your answer. |
| | It is an example of a non-functional requirement |
| | General Comments |
| | This one is talking about the limits of the application clearly NFR |
| | |
| 13. | |
| | Testing is a verification type QA activity |
| | True False |
| | raise |
| | Response Rationale Please provide a rationale for your answer. |
| | Yes it is part of validation and verifiation. |
| | |
| 14. | The module project uses a <i>depth-first</i> iterative model |
| | |
| | True False |
| | Decree Datasets |
| | Response Rationale Please provide a rationale for your answer. |
| | It uses a breadth-first iterative model |

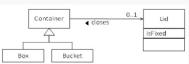
15.

The following command feeds the text in input.txt into AddressBook program and saves the output in the output.txt file. java input.txt $\frac{1}{8}$ AddressBook output.txt



18.

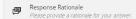
Consider the class diagram below



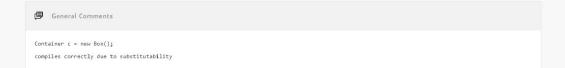
Identify the correct statement

[Justification: Why is it correct]

| | Container is an abstract class |
|---|--|
| | There is a dependency and coupling but not association between Container and Lid |
| • | The following code compiles Container c = new Box(); |
| | A Lid must be associated to a Container but it is optional for a Container to have a Lid |

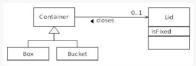


Rest are false. As box inherits the class container, that code compiles.



19.

Consider the class diagram below.



Which of the following diagrams is an object diagram compliant with the given class diagram? [Justification: Why are others not compliant?]

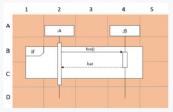




The naming must be correct for an object diagram. The navigatibility must also be right. Hence, the :Bucket which Inherits container class can have an association with the correctly named Lid object with the underline.



How many errors are there in the following sequence diagram?



[Justification: Indicate the cell(s) (i.e., A1, A2, ..., D5) where there are errors and state the errors]

| O 1 |
|--|
| • 4 |
| ○ 2 |
| 3 |
| |
| Response Rationale Please provide a rationale for your answer. |
| A4: Wrong name B1: Wrong label should be opt Timeline should be dotted. |
| |
| General Comments |
| B1: - Conditional is not "if" |
| A4: -: 8 should not be underlined in sequence diagram |
| B2 D2 & B4 D4: Iffe lines are not solid |
| B2: condition is not specified |
| Note: though these answers are terse, in the exam, please try to write a reasonable and understandable justifications. |

1.

Suppose you are reviewing the code below. Assume the coding standard is similar to the one you used in the CS2113/T.

```
1. /**
2. * Sets the address to the given value
3. */
4. public void address(String address) {
5.    //set address to a default value if null
6.    if (address == null) {
7.        this.address = "ABC avenue";
8.        return;
9.    }
10.    //set address to given value
11.    this.address = address;
12.}
```

Choose the incorrect option.

[Justify: Why is it incorrect?]

| | The method is named inappropriately |
|--------|--|
| | The header comment is missing some vital information about the method's behavior |
| • | The commenting intensity inside this method (i.e. excluding the header comment) is a perfect |
| | The code has an issue related to magic numbers |
| | |
| | Response Rationale Please provide a rationale for your answer. |
| The co | omments are not needed and this method is over-commented |

```
Comments inside the method are redundant and do not add much value.
         For the other options
         Header comment doesn't talk about setting the default value
         "ABC avenue" is a magic literal
         setAddress is a better name for this method
22.
      Which of the following lines has a coding standard violation?
       1. public void do_something() {
2.    for (int i = 0; i < 5; i++) {
3.        something();
4.        somethingElse();</pre>
       3.
4.
5.
6. }
      [Justification: What is the violation?]
         O 2

    3

          4
         Response Rationale
         The method name for line 3 and 4 should start with a verb and there are naming errors.
         General Comments
         Method names should follow camelCasing.
       You are testing the isWithinAWeek() method below. You have already chosen 4 as one of the test inputs.
       /** \, * Returns true if the length is within the span of a week (in days)
       boolean isWithinAWeek(int length) {
       Which of the following inputs is least suitable as the next test case?
       [Justification: Why is it least suitable?]
         _ 1
         7
         0 8
         Response Rationale
         3 belongs to the same partition as 4
         General Comments
         It is within the same partition as 4, and not a boundary value as well.
```

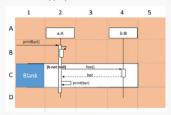
23.

Consider the code fragment below:

```
class A {
    B b;
    // ... more code

void printBar() {
    // some self call
    if(b != null) {
        bar = b.foo();
        print(bar);
    }
}
```

Choose the appropriate block to fill the blank cell, C1.



[Justification: What is the block occupied by cells C1, C2, C3, C4 called?]

| | alt |
|---|--------|
| | switch |
| • | opt |
| | if |

| 圕 | Response Rationale Please provide a rationale for your answer. | |
|---|--|--|
| | | |

It is a single if statment and hence the optional path is used

