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## Answer references for Exam INF3121 / INF4121 – 2018

### Part 2

#### 1 Question

**Which statement about static analysis is true?**

Select an alternative:

- Static analysis finds all faults.
- When properly performed, static analysis makes functional testing redundant.
- With static analysis, defects can be found that are difficult to find with dynamic testing.
- Compiling is not a form of static analysis.

#### 2 Question

**Non-functional testing includes ...**

Select an alternative:

- ... testing the quality attributes of the system including reliability and usability.
- ... testing to see where the system does not function correctly.
- ... gaining user approval for the system.
- ... testing a system feature using only the software required for that function.

#### 3 Question

**Which of the following could be a coverage measure for state transition testing?**

- V Number of states that have been reached.
- W The response time for each transaction.
- X Number of transitions that have been exercised.
- Y Number of boundaries have been exercised.
- Z Specific sequences of transitions have been exercised.

Select an alternative:

- V, X and Z
- V, X, Y and Z
- W, X and Y
- X, Y and Z

#### 4 Question

The different test design techniques can be used in several of the areas below. However, you should match them so that *all* the techniques are applied to the *most* suitable area.

Please match the values:

	Use case testing	EP and BVA	State transition testing	Decision table
Testing systems that calculates for postage for letters and parcels, based on the weight.	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Testing Coffee vending machines.	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Testing access control systems where the access is depending on certain conditions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Testing the accessibility of Graphical User Interfaces.	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

*EP and BVA: Equivalence partitioning and boundary value analysis*

#### 5 Question

What are the potential benefits from using tools in general to support testing?

Select an alternative:

- Greater repeatability of tests, reduction in repetitive work, objective assessment.
- Greater quality of code, reduction in paperwork, fewer objections to the tests.
- Greater quality of code, reduction in the number of testers needed, better objectives for testing.
- Greater responsiveness of users, reduction of tests run.

## 6 Question

Consider the following statements about regression tests:

- 1 They may usefully be automated if they are well designed.
- 2 They are the same as confirmation tests (re-tests).
- 3 They are a way to reduce the risk of a change having an adverse effect elsewhere in the system.
- 4 They are only effective if automated.

Which pair of statements is true?

Select an alternative:

- 1 and 3
- 2 and 4
- 1 and 2
- 2 and 3

## 7 Question

Which of these statements about functional testing is true?

Select an alternative:

- Structural testing is more important than functional testing as it addresses the code.
- Functional testing is useful throughout the life cycle and can be applied by business analysts, testers, developers and users.
- Inspection is a form of functional testing.
- Functional testing is more powerful than static testing as you actually run the system and see what happens.

## 8 Question

Which of these statements about reviews of specifications is true?

Select an alternative:

- Reviews are a cost effective early static test on the system.
- Reviews are not generally cost effective as the meetings are time consuming and require preparation and follow up.
- There is no need to prepare for or follow up on reviews.
- Reviews must be controlled by the author.

9 **Question**

**Which success factors are required for good tool support within an organization?**

**Select an alternative:**

- Acquiring the best tool and ensuring that all testers use it.
- Adopting practices from other successful organizations and ensuring that initial ways of using the tool are maintained.
- Adapting processes to fit with the use of the tool and monitoring tool use and benefits.
- Setting ambitious objectives for tool benefits and aggressive deadlines for achieving them.

10 **Question**

**Beta testing is ...**

**Select an alternative:**

- ... performed by customers at the software developer's site.
- ... performed by customers at their own site.
- ... useful to test software developed for a specific customer or user.
- ... performed by an independent test team.

11 **Question**

**Which of the following best describes integration testing?**

**Select an alternative:**

- Testing performed to expose faults in the interfaces and in the interaction between integrated components.
- Integration of automated software test suites with the product.
- Testing to verify that the test environment can be integrated with the product.
- Testing to verify that a component is ready for integration.

12 **Question**

During an early period of test execution, a defect is located, resolved and confirmed as resolved by re-testing. However, it is seen again later during a subsequent test execution.

Which of the following is a testing-related aspect of configuration management that is most likely to have broken down?

Select an alternative:

- Test documentation management
- Traceability
- Configuration control
- Confirmation testing

13 **Question**

What is the purpose of confirmation testing?

Select an alternative:

- To confirm that the detailed logic of a component conforms to its specification.
- To confirm the users' confidence that the system will meet their business needs.
- To confirm that a defect has been fixed correctly.
- To confirm that no unexpected changes have been introduced or uncovered as a result of changes made.

14 **Question**

A test plan is written specifically to describe a level of testing where the primary goal is establishing confidence in the system. Which of the following is a likely name for this document?

Select an alternative:

- System test plan
- Project plan
- Acceptance test plan
- Master test plan

15 **Question**

The *ISTQB Foundation Syllabus* establishes a fundamental test process where test planning occurs early in the project, while test execution occurs at the end.

Which of the following elements of the test plan, while specified during test planning, is assessed during test execution?

Select an alternative:

- Test tasks
- Test team training
- Exit criteria
- Environmental needs

**Part 3 – 30 points** References to the textbook

**Exercise 1 - Fundamentals of testing - 5 points**

a) Ref: Chapter 1.3.5 - *Principle 5: Pesticide paradox*

b) Ref: Chapter 1.4 – *The fundamental test process*

**Exercise 2 - Testing throughout the software life cycle - 7 points**

a) Ref: 2.2 – *Test levels*

b) Ref: 2.3.2 - *Testing of software product characteristics (non-functional testing)*

**Exercise 3 - Static techniques - 6 points**

a) Ref: 3.3 – *Static analysis by tool*, and Ref: 6.1.3 – *Tools support for static testing*

b) Ref: 6.2.3 - *Special considerations for some types of tools - Static analysis tools*  
(Fourth edition: 6.1.1, page 208)

**Exercise 4 EP/BVA – 5 points**

a) Ref: 4.3.1 - *Equivalence Partitioning and boundary value analysis* (Fourth edition, 4.2.2)

b) Answer: To determine which side of a boundary a value belong, the set must be **sorted in some kind of order**, increasing or decreasing.

(Fourth edition, 4.2.2)

c) Ref: 4.3.1, - *Equivalence Partitioning and boundary value analysis* (Fourth edition, 4.2.2)

Answer: BVA: The **minimum value** and the **maximum value** of the partition here \$.100.01 and \$999.99

d) Ref: 4.3.1, - *Equivalence Partitioning and boundary value analysis* (Fourth edition, 4.2.2)

Answer: EP: a common used value, often in the **middle** of the set, here e.g. 500.00

**Exercise 5 - Usability testing – 7 points**

a) Ref: Lecture slides: *Usability-testing, Human Computer Interaction*

b) Ref: Lecture slides: *Usability-testing, Human Computer Interaction*

c) Ref: Lecture slides: *Usability-testing and Accessibility testing, Personas*

## **Part 4 – two cases – 20 points**

**Case 1 - State transition testing – 10 points**

**Ref. 4.3.3. *State transition testing* (Fourth edition, 4.2.4)**

**Case 2 - Decision table testing - 10 points**

**Ref. 4.3.2 *Decision table testing* (Fourth edition, 4.2.3)**

## **Part 5 – Write a text – 20 points**

**Ref: Chapter 3.1 and 3.2**