Static Testing Basics

### Question 1

Which of the following statements about static testing are MOST true?

**a) Static testing is a cheap way to detect and remove defects.**

b) Static testing makes dynamic testing less challenging

c) Static testing makes it possible to find run-time problems early in the lifecycle

d) When testing safety-critical system, static testing has less value because dynamic testing finds the defects better

### Question 2

You are reading a user story in the product backlog to prepare for a meeting with the product owner and a developer, noting potential defects as you go. Which of the following statements is true about this activity?

a) It is not a static test, because static testing involves execution of the test object

b) It is not a static test, because static testing is always performed using a tool

c) It is a static test, because any defects you find could be found cheaper during dynamic testing

**d) It is a static test, because static testing does not involve execution of the test object**

### Question 3

Which of the following statements CORRECTLY reflects the value of static testing?

a) By introducing reviews, we have found that both the quality of specifications and the time required for development and testing have increased

b) Using static testing means we have better control and cheaper defect management due to the ease of detecting defects later in the lifecycle

c) Now that we require the use of static analysis, missed requirements have decreased and communication between testers and developers has improved

**d) Since we started using static analysis, we find coding defects that might have not been found by performing only dynamic testing**

### Question 4

Which of the following statements are characteristics of static testing, and which are characteristics of dynamic testing?

1. Finds defects in work products directly.

2. Better for ensuring internal quality (e.g. standards are followed).

3. Finds defects through failures in execution.

4. Easier and cheaper to find and fix security vulnerabilities (e.g. buffer overflow).

5. Focuses on externally visible behaviours.

a) Static testing: 2 and 4, Dynamic testing: 1, 3 and 5.

b) Static testing: 3 and 5, Dynamic testing: 1, 2 and 4.

**c) Static testing: 1, 2 and 4, Dynamic testing: 3 and 5.**

d) Static testing: 1, 2 and 3, Dynamic testing: 4 and 5.

### Question 5

You are working as a tester on an Agile team and have participated in over two dozen user story refinement sessions with the product owner and the developers on the team at the start of each iteration. As the reviews have gotten more effective at detecting defects in user stories and the product owner more adept at correcting those defects, you and the team notice that the team’s velocity, as shown in your burndown charts, has started to increase. Which of the following is a benefit of static testing that MOST DIRECTLY applies to increased velocity?

a) Increasing total cost of quality

b) Reducing testing cost

**c) Increasing development productivity**

d) Reducing total cost of quality

### Question 6

Which testing technique would be most effective in determining and improving the maintainability of the code (assuming developers fix what is found)?

a) Peer reviews

**b) Static analysis**

c) Dynamic testing

d) Unit testing

### Question 7

Which of the following statements about static testing is False?

a) Reviews are applicable to web pages and user guides.

**b) Static analysis is applicable to executing test scripts.**

c) Static analysis can be applied to work products written in natural language (e.g. English).

d) Reviews can be applied to security requirements and project budgets.

### Question 8

In which phase static tests are used

a) Requirements

b) Design

c) Coding

**d) All of the above**

### Question 9

Which of the following is a benefit of static analysis?

**a) Defects can be identified that might not be caught by dynamic testing**

b) Early defect identification requires less documentation

c) Early execution of the code provides a gauge of code quality

d) Tools are not needed because reviews are used instead of executing code

### Question 10

You are working on a video game development project, using Agile methods. It is based on Greek mythology and history, and players can play key roles in scenarios such as the battles between the Greeks and Trojans.

Consider the following user story and its associated acceptance criteria:

As a player, I want to be able to acquire the Rod of Midas (a new magic object), so that I can turn objects and other players into gold

AC1: The Rod must work on any object or player, no matter what size, which can be touched anywhere by the player holding the Rod

AC2: Holding the Rod does not change the player holding it into gold

AC3: Any object or player touched by the Rod transforms completely into gold within one millisecond

AC4: The Rod appears as shown in Prototype O.W.RoM

AC5: The transformation starts at the point of contact with the Rod and moves at a rate of one meter per millisecond

You are participating in a checklist-based review session of this user story.

This user story and its associated acceptance criteria contain which of the following typical defects identified by static testing in this type of work product?

a) Deviation from standards

**b) Contradiction**

c) Security vulnerability

d) Coverage gaps

### Question 11

Which of the following techniques is a form of static testing?

a) Error guessing

b) Automated regression testing

c) Providing inputs and examining the resulting outputs

**d) Code review**

### Question 12

Which of the following statements BEST states the value of static testing

**a) It can prevent defects later in the design and coding by uncovering issues in requirements**

b) It is most effective when performed after dynamic testing

c) It can detect the same defects as those found by dynamic testing

d) It can eliminate the need for unnecessary team member communication

### Question 13

What is the main difference between static and dynamic testing?

a) Static testing is performed by developers; dynamic testing is performed by testers

b) Manual test cases are used for dynamic testing; automated tests are used for static testing

c) Static testing must be executed before dynamic testing

**d) Dynamic testing requires executing the software; the software is not executed during static testing**

### Question 14

Defects discovered by static analysis tools include:

I. Variables that are never used

II. Security vulnerabilities

III. Programming Standard Violations

IV. Uncalled functions and procedures

a) I, II, III are correct

b) I, II, IV are correct

c) II, III, IV are correct

**d) I, II, III, IV are correct**

### Question 15

Which of the following software work products would be examined using static analysis techniques?

I. Test procedure

II. Component's code

III. Web pages

IV. Test procedure

V. User stories

a) I, II, III and IV

**b) I, II, III, IV and V**

c) II, III, IV and V

d) I, II and V