Software Testing

Assignment- 1

TYPE OF QUESTION: MCQ/MSQ

Number of questions: **10** **Total mark: 10 X 1 = 10**

For each of the following questions one or more of the given options are correct. Choose the correct options.

QUESTION 1:

Which of the following are **true** concerning verification?

a. Helps answer the question: "Have you built the right thing?"
b. Concerns checking the final product against its specification.
c. Usually carried out by the test team.
d. May consist of review and simulation activities
e. Checks whether an artifact produced at the end of a phase conforms to the corresponding artifact produced in a previous phase.

Correct Answer: d. May consist of review and simulation activities, **e.** Checks whether an artifact produced at the end of a phase conforms to the corresponding artifact produced in a previous phase.

Detailed Solution: Verification consist of review and simulation and check whether an artifact produced at the end of a phase conforms to the corresponding artifact produced in a previous phase.

QUESTION 2:

Which of the following can be inferred from the pesticide paradox?

a. More number of bugs are detected towards the end of testing
b. A varied set of testing strategies should be used to effectively test a program
c. More severe bugs are detected towards the end of testing
d. After a test methodology has been used on a program to detect bugs, it is ineffective for detecting the remaining bugs
e. A set of test methodologies should be applied again and again until all bugs are eliminated

Correct Answer: b. A varied set of testing strategies should be used to effectively test a program **d.** After a test methodology has been used on a program to detect bugs, it is ineffective for detecting the remaining bugs

Detailed Solution:

The phenomenon that the more you test software, the more immune it becomes to your tests. So, variation set of testing strategies should be used. So, from all the available option we can see, option 'b.' and 'd.' is the correct option.

QUESTION 3:

Suppose an untested program was determined to contain 1000 bugs. Three different testing techniques were applied to test the code. Each testing technique is effective to detect 40% of the bugs that exist before the concerned testing technique is applied. While fixing a bug detected by using a test strategy, there is a 50% chance of creating a new bug. How many bugs would exist in the code after the three testing and bug-fix cycles have been carried out?

a. 270
b. 328
c. 430
d. 512
e. 650

Correct Answer: d. 512

Detailed Solution:

Test 1: Total bugs = 1000, 40% of 1000 = 400, 50 % of 400 = 200, remaining bugs = 1000-400+200=800. Test 2: Total bugs = 800, 40% of 800 = 320, 50 % of 320 = 160, remaining bugs = 800-320+200=160 = 640. Test 3: Total bugs = 640, 40% of 640 = 256, 50% of 256 = 128, Remaining final bugs= 640-256+128=512.

QUESTION 4:

Why is it necessary to test a large program at three different levels: unit, integration, as well as the system level, rather than thoroughly testing only at the system level?

a. It reduces the number of test cases that need to be designed
b. It reduces the test execution effort
c. It reduces the debugging effort
d. It reduces test case design effort.
e. More powerful testing strategies can be deployed

Correct Answer: c. It reduces the debugging effort

Detailed Solution:

If we thoroughly test in the system level only, it may possible some faults of unit or integration level remain undetected. So, debugging those undetected bugs become hurdle. But, if we test in different level, debugging effort reduces.

QUESTION 5:

Pick the correct statement from the following:

a. Every programming error causes a bug
b. Every programming error is caused by a failure
c. Every failure is caused by a fault
d. Every bug can be tracked to a programming error
e. Every bug causes a failure

Correct Answer: c. Every failure is caused by a fault

Detailed Solution:

Every failure is caused by a fault. Please refer to the Software Testing lecture material of week-1 from page no. 2 to page no. 5.

QUESTION 6:

During unit testing, which one of the following provides the non-local data structures to the unit under test for accessing?

a. Stub
b. Driver
c. Both stubs and drivers
d. Test cases
e. Instrumentation of the code of the unit under test

Correct Answer: b. Driver

Detailed Solution:

A driver module contains the nonlocal data structures accessed by the module under test, and would also have the code to call the different functions of the module with appropriate parameter values.

QUESTION 7:

Unit testing of a software module does **NOT** test which of the following?

a. Whether the module interfaces well with other modules.
b. Whether the functions in the module are working as per design.
c. Whether all arithmetic statements in the module are working properly.
d. Whether the module meets the non-functional requirements specified in the SRS document
e. Whether all control statements in the module are working properly.

Correct Answer: a. Whether the module interfaces well with other modules
d. Whether the module meets the non-functional requirements specified in the SRS document

Detailed Solution:

Module interfaces with other modules tested during integration testing. The non-functional test comes under **a black box testing technique**.

QUESTION 8:

Which of the following statements BEST describes performance testing?

a. The process of testing a fully integrated system to verify that it meets its specified function requirements.
b. The process of testing to determine the compliance of a system to coding standards.
c. Testing without reference to the internal structure of a system.
d. Testing system attributes, such as usability, reliability, and maintainability.
e. Testing whether different modules interface well among themselves.

Correct Answer: d. Testing system attributes, such as usability, reliability, and maintainability

Detailed Solution:

Performance Testing checks the speed, response time, reliability, resource usage, scalability, maintainability of a software program under their expected workload. The purpose of Performance Testing is not to find functional defects but to eliminate performance bottlenecks in the software or device.

QUESTION 9:

Which one of the following best describes the purpose of smoke test?

a. Carry out a final round of testing of the software after black-box and white-box test are over
b. Check whether the system is behaving as expected for a few sample inputs
c. Carry out performance testing
d. Carry out usability testing
e. Carry out test whether module interfaces are working properly

Correct Answer: b. Check whether the system is behaving as expected for a few sample inputs

Detailed Solution:

Smoke Testing, also known as "Build Verification Testing", is a type of software testing that comprises of a non-exhaustive set of tests that aim at ensuring that the most important functions work. The result of this testing is used to decide if a build is stable enough to proceed with further testing. So, option **b**. is correct.

QUESTION 10:

Who among the following performs acceptance testing?

a. Customer
b. Quality assurance team of the developing organization
c. Developers
d. System analysts
e. Test team of the developing organization

Correct Answer: a. Customer

Detailed Solution:

Acceptance Testing is performed by people who are not employees of the organization that developed the software. Acceptance Testing is mainly performed by the customers of the organization that developed the software. They are the ones who asked the organization to develop the software.

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