**Đề 6\_đáp án**

1. Which of the following describes NOT related with Testing Principles on Syllabus?[K2]
2. **Automated tests allow better statements of confidence about the quality of software products than manually executed tests.**
3. Exhaustive testing of software is, with sufficient effort and tool support, feasible for all software.
4. For a software system, it is normally impossible to test all input / output combinations.
5. The purpose of testing is demonstrating the absence of defects.
6. Seven Testing Principles is a number of testing principles have been suggested over the past 40 years and offer general guidelines common for all testing. Which one of the following descriptions about seven testing principles is FALSE? [K2]
7. Testing everything is not feasible except for trivial cases. Instead of exhaustive testing, risk analysis and priorities should be used to focus testing efforts.
8. Testing effort shall be focused proportionally to the expected and later observed defect density of modules.
9. Finding and fixing defects does not help if the system built is unusable and does not fulfill the user’s needs and expectations.
10. **Testing can show that defects are present, and can prove that there are no defects.**
11. A certain degree of independence (avoiding the author bias) often makes the tester more effective at finding defects and failures. Independence is not, however, a replacement for familiarity, and developers can efficiently find many defects in their own code. Which of the following is the lowest level of independence? [K1]
12. **Tests designed by the person(s) who wrote the software under test with the low level of independence**
13. Tests designed by a person(s) from an outsourcing or certification by an external body
14. Tests designed by a person(s) from an independent test team or performance test specialists.
15. Tests designed by another person(s) from development team
16. The followings describe about causes of software defects. Which of the following is a correct statement? [K1]
17. A developer makes a mistake which causes a bug that may be seen as a defect when the software is executed.
18. A developer makes an error which results in a failure that may be seen as a fault when the software is executed
19. **A developer makes a mistake which causes a defect that may be seen as a failure during dynamic testing**
20. A developer has a failure which results in a defect that may be seen as a mistake during dynamic testing.
21. Which of the following statements is NOT true? [K2]
22. **Rigorous testing is sometimes used to prove that all failures have been found.**
23. Rigorous testing and fixing of found defects could help reduce the risk of problems occurring in an operational environment.
24. Software testing is mainly needed to improve the quality of the product.
25. Software testing may be required to meet legal or contractual requirements.
26. Which of the following statements correctly describes the difference between testing and debugging? [K2]
27. Testing identifies the source of defects; debugging analyzes the faults and propose prevention activities.
28. **Dynamic testing shows failures caused by defects; debugging finds, analyzes, and removes the causes of failures in the software.**
29. Testing removes faults; debugging identifies the causes of failures.
30. Dynamic testing prevents the causes of failures, debugging removes the failures.
31. A common perception of testing is that it only consists of running tests, i.e.., executing the software. This is part of testing, but not all of the testing activities. Which of the following statements is NOT one of testing objectives? [K1]
32. Providing information for decision-making
33. Finding defects
34. Gaining confidence about eh level of quality
35. **Preventing errors**

**Questions “Testing throughout the software life-cycle”**

1. Which of following describes NOT Interactive-incremental development model? [K1]
2. **V-Model**
3. Rapid Application Development
4. Rational Unified Process
5. Agile Development Model
6. Non-functional testing includes, but is not limited to, performance testing, load testing, stress testing, usability testing, maintainability testing, reliability testing and portability testing. It is the testing of “how’ the system works. Where the Non-functional testing is performed? [K1]
7. At system and acceptance testing levels only
8. At the acceptance testing level only
9. At all level above integration testing
10. **At all test levels**
11. What is the purpose of performing regression testing when system maintenance activities have occurred? [K2]
12. To ensure no unauthorized changes have been applied to the system
13. **Ensure the overall system has not regressed**
14. To identify any maintainability issues with the code
15. To assess the scope of maintenance performed on the system
16. A group of test activities can be aimed at verifying the software system (or a part of a system) based on a specific reason or target for testing. Which following statement is NOT true about the objectives of test types? [K2]
17. A function to be performed by the software
18. The structure or architecture of the software or system
19. **A non-functional quality characteristic, such as security and interoperability testing**
20. Changed related, i.e.., confirming that defects have been fixed ( confirmation testing) and looking for unintended changes (regression testing)
21. Which following is NOT true about test levels? [K2]
22. **Acceptance testing include testing of functionality and specific non-functional characteristics, such as resource-behavior (e.g.., searching for memory leaks) or robustness testing, as well as structural testing (e.g., decision coverage)**
23. Integration testing tests interfaces between components, interactions with different parts of a system, such as the operating system, file system and hardware, and interfaces between systems.
24. System testing is concerned with the behavior of a whole system/product. The testing scope shall be clearly addressed in the Master and/ or Level Test Plan for that test level.
25. Component Testing searches for defects in, and verifies the functioning of, software modules, programs, objects, classes, etc,., that are separately testable.
26. There are several characteristics of good testing in any life cycle model. Which statement is NOT true about the characteristics of good testing? [K1]
27. Testers should be involved in reviewing documents as soon as drafts are available in the development life cycle
28. Each test level has test objectives specific to that level
29. **The planning of tests for a given test level should begin during the corresponding**
30. For every development activity there is a corresponding testing activity.
31. Maintenance testing is done on an existing operational system, and is triggered by modifications, migration, or retirement of the software or system. Which following statement describes about the indicators of maintenance testing? [K1]
32. Regression testing is the repeated testing of an already tested program, after modification, to discover any defects introduced or uncovered as a result of the change.
33. **Conversion testing is needed when data from another application will be migrated into the system being maintained.**
34. Modifications of a system may include the testing of data migration or archiving if long data-retention periods are required.
35. Maintenance testing for the retirement include planned enhancement changes (e.g., release-based), corrective and emergency changes, and changes of environment.

**Questions " Static Techniques"**

1. Unlike dynamic testing, which requires the execution of software, static testing techniques rely on the manual examination (reviews) and automated analysis (static analysis) of the code or other project documentation without the execution of the code. Which of the following is a benefit of using static techniques? [K2]
2. **Productivity improvements in the development process.**
3. Fewer performance defects.
4. More efficient regression testing.
5. Quick return on investment in static analysis tools
6. The formality of a review process is related to factors such as the maturity of the development process, any legal or regulatory requirements or the need for an audit trail. The followings details about the main phases of a formal review. Which is NOT correct? [K2]
7. Planning: defining the review criteria and selecting the personnel
8. **Kick-off: selecting which parts of documents to review**
9. Rework: fixing defects found and recording updated status of defects
10. Follow-up: checking that defects have been addressed
11. In a formal review, which role is normally responsible for leading the review of the document or set of documents, including planning the review, running the meeting, and following-up after the meeting. If necessary, the moderator may mediate between the various points of view and is often the person upon whom the success of the review rests? [K1]
12. The manager
13. The author
14. The scribe
15. **The moderator**

Questions "Test Design Techniques"

1. Which test techniques might be most appropriate to be performed as the product is evolving or as a final check before the software is released? [K1]
2. **Exploratory Testing**
3. Boundary Value Analysis
4. Error Guessing
5. Decision Table Testing
6. What is non-functional testing?..[K1]
7. The process of testing an integrated system to verify that it meets specified requirements.
8. The process of testing to determine the compliance of a system.
9. Testing without reference to the internal structure of a system.
10. **Testing the attributes of system like usability or stability.**
11. Experience-based testing is where tests are derived from the tester's skill and intuition and their experience with similar applications and technologies. Which of the following is a reason to use experience-based testing?[K1]
12. To target the developer's efforts to the areas that users will be more likely to use
13. **To find defects that might be missed by more formal techniques.**
14. To test for defects that only experienced users would encounter
15. It is supported by tools and can be automated
16. Decision coverage is determined by the number of all decision outcomes covered by (designed or executed) test cases divided by the number of all possible decision outcomes in the code under test. If your goal is to achieve 100% decision coverage, what testing techniques is used for this?[K2]
17. Behavior-based techniques
18. Experience-based techniques
19. Defect-based techniques
20. **Structure-based techniques**
21. During test analysis, the test basis documentation is analyzed in order to determine what to test, i.e., to identify the test conditions. How does a test condition relate to a test case?[K1]
22. A test condition is the output from a test case
23. A test case creates test conditions
24. A test condition defines the test case
25. **A test case tests a test condition**
26. Which statement is included in the common characteristicof specified-based test design techniques?[K1]
27. The extent of coverage of the software can be measured for existing test cases, and further test cases can be derive systematically to increase coverage
28. Information about how the software is constructed is used to derive the test cases
29. Knowledge about likely defects and their distribution is another source of information
30. **Models, either formal or informal, are used for the specification of the problem to be solved, the software or its components**
31. What does it mean if a set of tests has achieved 90% statement overage? [K1]
32. 9 out of 10 decision outcomes have been exercised by this set of tests.
33. **9 out of 10 statements have been exercised by this set of tests.**
34. 9 out of 10 tests have been run on this set of software.
35. 9 out of 10 requirements statements about the software are correct.
36. You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows:

0-39=D-, 40-44=D, 45-49=D+, 50-54=C-, 55-59=C, 60-64=C+, 65-69=B-, 70-74=B, 75-79=B+, 80-84=A-, 85-89=A, 90-100=A+

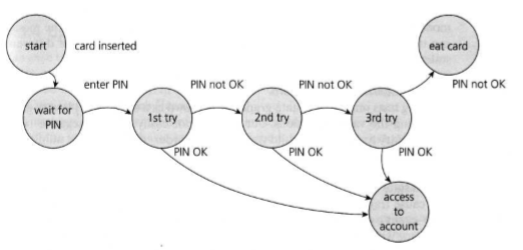
If you apply equivalence partitioning, how many test cases will you need to achieve minimum test coverage? [K3]

1. 11
2. 12
3. 13
4. **14**
5. You are testing a machine that scores exam papers and assigns grades. Based on the score achieved the grades are as follows:

0-39=D-, 40-44=D, 45-49=D+, 50-54=C-, 55-59=C, 60-64=C+, 65-69=B-, 70-74=B, 75-79=B+, 80-84=A-, 85-89=A, 90-100=A+

If you apply boundary value analysis, how many test cases will you need to achieve minimum test coverage? [K3]

1. 24
2. **26**
3. 48
4. 49
5. State transition testing is used to test the ability of the software are to enter into and exit from defined states via valid and invalid transitions. Given the following state transition diagram, how many test cases are required to cover 100% 1-switch coverage respectively from 1st try?[K4]



1. 4
2. **3**
3. 6
4. 5
5. You have designed test cases to provide 100% statement and 100% decision coverage for the following fragment of code.

if width > length

then

biggest\_dimension = width

else

biggest\_dimension = length

end\_if

The following has been added to the bottom of the code fragment above

print "Biggest dimension is "& biggest\_dimension

print "Width: "& width

print "Length:"& length

How many more test cases are required? [K3]

1. One more test case will be required for 100% statement coverage.
2. Two more test cases will be required foe 100% statement coverage, one of which will be

used to provide 100% decision coverage.

1. One more test case will be required for 100% decision coverage.
2. **None, existing test case can be used.**
3. Consider the following decision table

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Conditions** | Rule 1 | Rule 2 | Rule 3 | Rule 4 |
| Over 23? | F | T | T | T |
| Clean driving record? | - | F | T | T |
| On Business? | - | - | F | T |
| **Actions** |  |  |  |  |
| Supply rental car? | F | F | T | T |
| Premium charge? | F | F | F | T |

Given this decision table, what is the expected result for the following test case?[K3]

TC1: A 26-year-old on business but with violations or accidents on his driving record

TC2: A 62-year-old tourist with a clean driving record

1. TC1: Don't supply car, TC2: Supply car with premium charge.
2. TC1: Supply car with premium charge, TC2: Supply car with no premium charge
3. **TC1: Don't supply car, TC2: Supply car with no premium charge.**
4. TC1: Supply car with premium charge, TC2: Don’t supply car.

**Questions "Test Management"**

1. Planning is influenced by the test policy of the organization, the scope of testing, objectives, risks, constraints, criticality, testability and availability of resources. As the project and test planning progress, more information becomes available and more detail can be included in the plan. What is the purpose of test exit criteria in a test plan: [K1]
2. To set the criteria used in generating test inputs
3. **To plan when to stop testing**
4. To know when a specific test has finished its execution
5. To ensure that the test case specification is complete
6. Development staff may participate in testing, especially at the lower levels, but their lack of objectivity often limits their effectiveness. The independent testers may have the authority to require and define test processes and rules, but testers should take on such process-related roles only in the presence of a clear management mandate to do so. Which following is NOT the benefits of independent tester? [K2]
7. **Independent testers may not verify assumptions people made during specification and implementation of the system**
8. Isolation from the development team
9. Independent testers may be seen as a bottleneck for blamed for delay in release
10. Developers may lose a sense of responsibility for quality.
11. The test approach is the implementation of the test strategy for a specific project and defined and refined in the test plans and test designs. There are several approaches and which following statement is TRUE about Methodical approaches? [K2]
12. Stochastic testing using statistical information about failure rates (such as reliability growth models) or usage (such as operational profiles)
13. Exploratory testing where testing is more reactive to events than pre-planned, and where execution and evaluation are concurrent tasks
14. **Failure-based (including error guessing and fault attacks), experience-based, checklist-based, and quality characteristic-based**.
15. Risk-based testing where testing is directed to areas of greatest risk.
16. Once the test effort is estimated at the test estimation activity, resources can be identified and a schedule can be drawn up. Which following factor is NOT about factors that the testing effort may depend on?[K1]
17. **Coverage of functionality**
18. Outcome of testing
19. Characteristics of the product
20. Characteristics of the development process.
21. Test reporting is concerned with summarizing information about the testing endeavor and the outline of a test summary report is given in IEEE Std 829-1998. What is covered in the variances section of the test summary report? [K2]
22. The variances between the weekly status reports and the final summary report
23. **The variances between what was planned for testing and what was actually tested**
24. The variances between the test cases executed and the total number of test cases
25. The variances between the defects found and the defects fixed
26. Which following description is NOT correct about risk and testing? [K1]
27. Risks are used to decide where to start testing and where to test more; testing is used to reduce the risk of an adverse effect occurring, or to reduce the impact of an adverse effect
28. The level of risk will be determined by the likelihood of an adverse event happening and the impact
29. Risk can be defined as the chance of an event, hazard, threat or situation occurring and resulting in undesirable consequences or a potential problem
30. **The purpose of risk is to establish and maintain the integrity of the products of the software or system**
31. You have been given the following set of test cases to run. You have been instructed to run them in order by risk and to accomplish the testing as quickly as possible to provide feedback to the developers as soon as possible. Given this information, what it the best order in which to run these tests?[K3]

|  |  |  |  |
| --- | --- | --- | --- |
| **Test Case ID** | **Duration** | **Risk Priority** | **Dependency** |
| 1 | 30 mins | Low | 6 |
| 2 | 10 mins | Medium | None |
| 3 | 45 mins | High | 1 |
| 4 | 30 mins | High | 2 |
| 5 | 10 mins | Medium | 4 |
| 6 | 15 mins | Low | 2 |

1. 6,1,3,2,4,5
2. 4,3,2,5,6,1
3. 2,5,6,4,1,3
4. **2,4,5,6,1,3**
5. If your test strategy is relying on making systematic use of some predefined set of tests or test conditions, what types of test strategy is used? [K2]
6. Reactive
7. Analytical
8. Regulatory
9. **Methodical**
10. Contextual factors for test process influence the test process for an organization and the followings are the example of the contextual factors. Which is NOT the one of operational constraints?
11. Contractual and regulatory requirements
12. **Test Environments**
13. Budgets and resources
14. Complexity
15. Some tools are geared more for developer use. Which tool is NOT used for developers?
16. Static analysis tools
17. Continuous integration tools
18. Dynamic and analysis tools
19. **Model-Based testing tools**
20. Which of the following describes the purpose of dynamic analysis tool?
21. To enable tests to be executed automatically or semi-automatically, using stored inputs and expected outcomes.
22. To help with review processes, and may store / communicate checklists and guidelines, comments, and track defects and effort
23. To determine the differences between expected and actual test results
24. **To find defects only evident when the software is executing, such as time dependencies or memory leaks.**