Not all term definition problems will be on the quiz. Some percentage of the term definition problems will be on the quiz.

1. Validation is

a) building the right product.

b) building the product right.

c) demonstrated through dynamic testing.

d) demonstrated through static testing.

2. ~~Management is excited because the test group ran the last series of tests and found no errors. Management told the customer that they expect to find no delivered problems, but the test team is not convinced. This is best explained by which of the following?~~

1. ~~the exhaustive testing fallacy.~~
2. ~~the pesticide paradox fallacy.~~
3. ~~the absence-of-errors fallacy.~~
4. ~~the testing is context dependent fallacy.~~

3. As discussed in class, defect removal is accomplished through which ONE of the following activities?

1. software testing and debugging.
2. software testing and troubleshooting.
3. by performing static testing instead of dynamic testing.
4. identifying causes and changing the process to prevent occurrence.

4. A failure is NOT directly caused by which of the following?

a) defect.

b) error.

c) bug.

d) fault.

5. Which of the following would NOT cause a off-by-one error condition?

1. Logical error of inclusion or exclusion "fencepost error".
2. Zero based vs. physical numbering.
3. Use of incorrect operators, e.g. < instead of <=
4. Use of precise prepositional words/phrases such as above or below.

6. The term failure is NOT defined by which of the following?

a) a deviation of the component or system from its expected delivery.

b) a deviation of the component or system from its expected domain.

c) a deviation of the component or system from its expected service.

d) a deviation of the component or system from its expected result.

7. Which of the following represents the weakest criteria for state diagram testing?

1. a set of tests that visit every state and traverse every transition.
2. a set of tests that trigger all unique transitions at least once.
3. at least one test covering every row in a state table.
4. a test that addresses each row and each unique input combination in a state table.

8. How many boundary values are required to test the following condition “(if a>25)…”

1. two.
2. two or three depending upon the required approach.
3. three.
4. four.

9. The phrase Black-box testing, although outdated, is best defined by which of the following?

1. testing to the inputs and outputs only – ignoring the internals of the software.
2. a mix of internal and external testing of the software.
3. testing purely to the internal paths and variables of the software.
4. a testing approach that only applies to system level testing – all other testing uses internal information.

10. Technical reviews of software artifacts can be used to

a) eliminate up to 90 percent of the defects from these products.

b) substitute for performing project management activities.

c) demonstrate to customers that Agile processes are being utilized.

d) detect dynamic/globally scoped software defects.

11. What kind of defects are typically found in technical reviews?

1. global defects – those with wide scopes.
2. dynamic defects – those that require precise timing or extensive sequencing.
3. defects that have dynamic user interactions.
4. defects that are narrow in scope and mostly static in execution.

12. For a given decision table and set of equivalence classes which one of the following methods would NOT fully verify them?

1. to test all possible conditions.
2. to test each equivalence class and inspect each unique condition within that class.
3. to test all unique actions.
4. to inspect all possible conditions.

13. What is the best method for addressing software deficiencies when encountered?

1. to fully test the software to identify all problems.
2. to document the deficiency and possible workaround in the delivered documentation.
3. to correct all problems discovered.
4. to negotiate discovered defects with the customer after delivery.

14. When a functional requirement refers to a decision table, which is the best approach of specifying the functional requirement?

1. to restate the table in the textual requirement because decision tables are hard to read.
2. to make the decision table sound like a textual description since text is the best method of specifying requirements.
3. to only state the decision table without text because it is the best method of stating requirements.
4. to state that “the interest rate shall be calculated as indicated in the following table”.

15. An anomaly is discovered between the requirements specification and the code when executing a software test. Which is the best method of addressing this?

1. update the requirement – it is usually the source of the problem.
2. update the code – requirements conflicts are always problems in the code.
3. update the test – the test case itself could be wrong.
4. to review the test case against the requirements and to verify the proper action with the requirements authors.

The following decision table is used by the next several questions.



16. What is the minimum number of tests for the previous decision table? Assume any errors, if present, are not relevant.

a) 6

b) 10

c) 12

d) 14

17. Given the previous decision table, are there any specification issues?

a) No, the table is specified correctly.

b) Yes, the table has over-specified conditions.

c) Yes, the table has over-specified actions.

d) Yes, the table had under-specified actions.

18. Given the previous table, how many unique ECPs exist?

a)3

b)4

c)5

d)6

19. How many boundary values are required to test the following condition “(if a!=25)…”

a) two.

b) two or three depending upon the required approach.

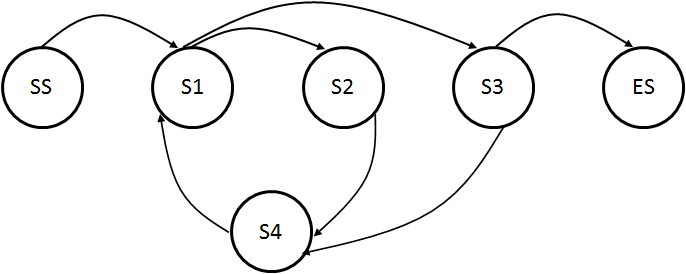
c) three.

d) four.

20. Defect prevention is best accomplished through which of the following activities?

1. automation of software testing.
2. by increasing the number software test cases.
3. by increasing the number software test activities.
4. identifying causes and changing the process to prevent occurrence.

21. For the following state diagram, which of the following transitions best represents a valid 2-switch test case?

****

a) (SS,S1)

b) (SS,S1,S2)

c) (S1,S2,S3)

d) (SS,S1,S2,S4)

22. Which of the following is the best definition of a latent defect?

1. a discovered defect in software undergoing test.
2. the technique of purposely injecting or seeding faults in the software to assess test coverage.
3. an undiscovered defect in delivered software.
4. a defect in a previous release described by release documentation.

23. Verification is

a) building the right product.

b) building the product right.

c) demonstrated through dynamic testing.

d) demonstrated through static testing.

24. Peer review, walkthrough, and formal inspection are types of

a) technical reviews.

b) software validations.

c) customer review.

d) expert review.

25. In a requirements specification, there are four methods of verification, which of the following are those methods?

a) test, execution, inspection and demonstration.

b) test, analysis, execution and demonstration.

c) unit, integration, system and acceptance test.

d) test, analysis, inspection, and demonstration.

26. A deficiency is best described by which of the following?

1. software that meets its specification, but the specification is wrong.
2. a hidden fault or undiscovered bug in delivered software.
3. a shortcoming discovered in the requirements specification only.
4. a fault or defect known at the time of software delivery.

27. Troubleshooting is NOT the process of

a) isolating to possible problems in the software.

b) fixing problems in the software.

c) isolating to possible problems in the documentation.

d) determining if the test case that found a possible anomaly is correct.

28. The phrase test oracle is best defined as which of the following?

a) an expert in test.

b) a program used to determine unreachable conditions in the code.

c) a program used to automatically develop test cases.

d) a source to determine expected results which are compared with the actual result of the software under test.

The following state diagram is used for the next several questions:



29. Which of the following correctly answers the question, "is the previous state diagram a valid diagram?"

a) Yes.

b) No, because state S2 is an unreachable state.

c) No, because there is no stop or ending state specified.

d) No, because state S2 is a dead-state.

30. The sequence "start, a, a, a " will produce what values of x and y?

a) y=0, x=0

b) y=1, x=1

c) y=2, x=1

d) y=1, x=2

31. The sequence "start, a, a, b, b, a " will produce what values of x and y?

a) y=0, x=0

b) y=1, x=1

c) y=0, x=1

d) y=1, x=0

32. Which of the following best represents the possible ranges of x and y? Assume all ranges are inclusive.

a) x={0,4}, y={0,4}

b) x={1,inf}, y={0,inf}

c) x={1,inf}, y={1,4}

d) x={1,inf}, y={0,4}

33. How many rows would the previous diagram require to be captured as specified in a state transition table?

a) 6

b) 7

c) 8

d) 9

**The quiz will have several of the following style questions. Draw ECPs/BVs carefully review boundary conditions. Use the homework problems to help prepare for these.**

Use the following problem description for the next few problems (assume a 0.1 significance):

A gas tank holds 100 gallons. The software controls 3 lights (red, yellow or green) and a chime. When the tank is below 10 percent capacity the software turns on a green light, when below 20 percent turns on the yellow light, when below 30 percent the red light, and when above 5 percent turns on the chime.

34. How many test cases are required to test all boundary conditions?

a) 6

b) 7

c) 8

d) 10

35. For the previous problem, which of the following best describes the expected outputs for the gas tank when reading 7.5 gallons?

a) Chime=On, Green=On, Yellow=On, Red=On

b) Chime=Off, Green= On, Yellow= On, Red= On

c) Chime=On, Green= Off, Yellow= Off, Red= Off

d) Chime=On, Green=On, Yellow= On, Red= Off

36. For the previous problem, which of the following best describes the expected outputs for the gas tank when reading 50 gallons?

a) Chime=On, Green=On, Yellow=On, Red=On

b) Chime=Off, Green= On, Yellow= On, Red= On

c) Chime=On, Green= Off, Yellow= Off, Red= Off

d) Chime=On, Green=On, Yellow= On, Red= Off

37. For the previous problem, which of the following best describes the expected outputs when the gas tank is empty?

a) Chime=On, Green=On, Yellow=On, Red=On

b) Chime=Off, Green= On, Yellow= On, Red= On

c) Chime=On, Green= Off, Yellow= Off, Red= Off

d) Chime=On, Green=On, Yellow= On, Red= Off

38. For the previous problem, which one of the following test cases does NOT have redundant actions/outputs?

a) Gallons=30, 29.9, 20.0, 7.5

b) Gallons=0.0, 5.0, 7.5, 19.9

c) Gallons=10.0, 19.9, 25.0, 30.0

d) Gallons=5.0, 19.9, 20.0, 30.0

39. Shipping for the product is calculated as follows. If the weight is between 10 and 20 ounces the shipping is a flat fee of $5.25, if less than 10 then a flat fee of $3.95, if greater than 20 ounces a fee of $0.40/ounce is charged. Which of the following input sets fully test this function? Assume a significance of 0.1 ounce and currency rules.

a) 0, 9.9, 10.0, 20.0, 20.1, 25.0

b) 0, 10.0, 10.1, 20.0, 20.1

c) 0, 9.9, 10.0, 20.0, 20.1

d) 0, 10.0, 10.1, 20.0, 20.1, 25.0

40. Which of the following output sets correctly represents the expected outputs for the previous problem correct input set?

a) $0, $3.95, $5.25, $5.25, $8.00

b) $3.95, $3.95, $5.25, $5.25, $8.00, $10.00

c) $3.95, $3.95, $5.25, $5.25, $8.00

d) $3.95, $3.95, $5.25, $5.25, $8.04, $10.00

41. What is the minimum number of tests for the following decision table?



a) 3

b) 4

c) 7

d) 8

42) How many unique ECPs are in the previous decision table?

a) 3

b) 4

c) 6

d) 8

43) The following is a list of problems that can be observed during testing or in production. Which of these problems is a failure?

a) The product crashed when the user selected an option in a dialog box.

b) One source code file included in the build has the

wrong version.

c) The computation algorithm used wrong input variables.

d) The developer misinterpreted the requirement for the algorithm.

44) Which of the following test techniques is not a Specification based testing technique?

a) Equivalence Partitioning

b) Boundary Value Analysis

c) Initialization testing

d) State Transition Testing