

**Sample Exam**

**Certified Model-Based Tester**  
**Foundation Level**

**Questions**

ASTQB Created - 2018

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American Software Testing Qualifications Board

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**This exam should be completed in 60 minutes. Each question is worth 1 point.**

#1. If test cases are automatically generated from a model, what type of testing is this?

- a. Automated testing
- b. Model-based testing
- c. Auto-model testing
- d. Model-based automation

#2. How does MBT help to improve communication in a project?

- a. By eliminating the need for written documentation
- b. By creating a common perception and understanding of the requirements
- c. By eliminating misunderstandings through generating the requirements from cross-functional input
- d. By creating detailed models that eliminate the confusion of abstractions

#3. Which of the following is a true statement regarding MBT models?

- a. The models are always correct because they are generated by algorithms that are already tested
- b. The models may have errors that are introduced through defects in the algorithms
- c. The models may have errors that were introduced when the tester created the model
- d. The models are never correct when first generated and require some adjustment after they are created

#4. Selecting and implementing MBT tools normally occurs in which step of the fundamental test process?

- a. Planning
- b. Analysis and Design
- c. Implementation and Execution
- d. Control and Monitoring

#5. Which of the following is an output artifact of MBT?

- a. Test strategy
- b. Test execution schedules
- c. The risks section of the test plan
- d. The requirements

#6. In what type of project should you expect to see traceability between the MBT model elements and the user stories?

- a. V-model
- b. Waterfall
- c. Agile
- d. Auto-model

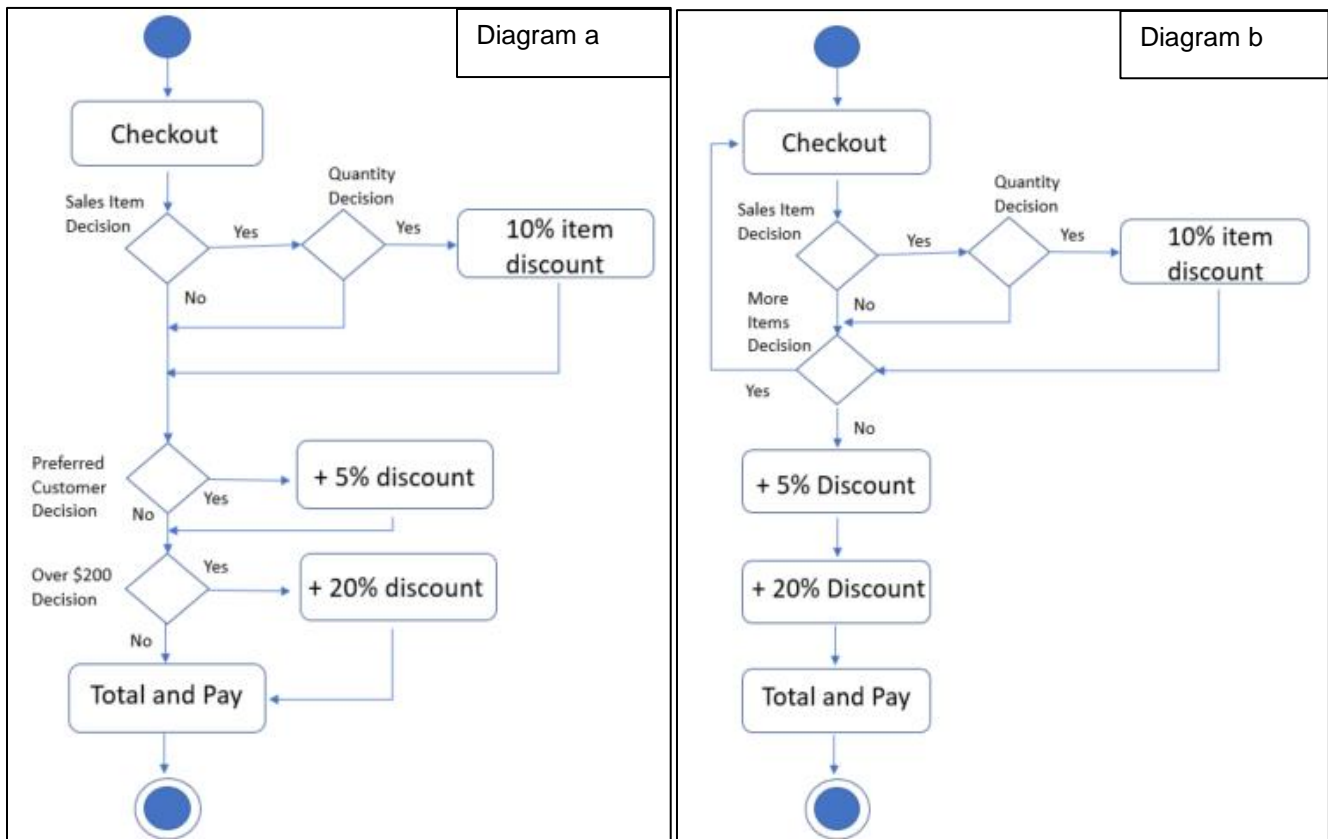
#7. In what way does MBT help to improve the quality of user stories?

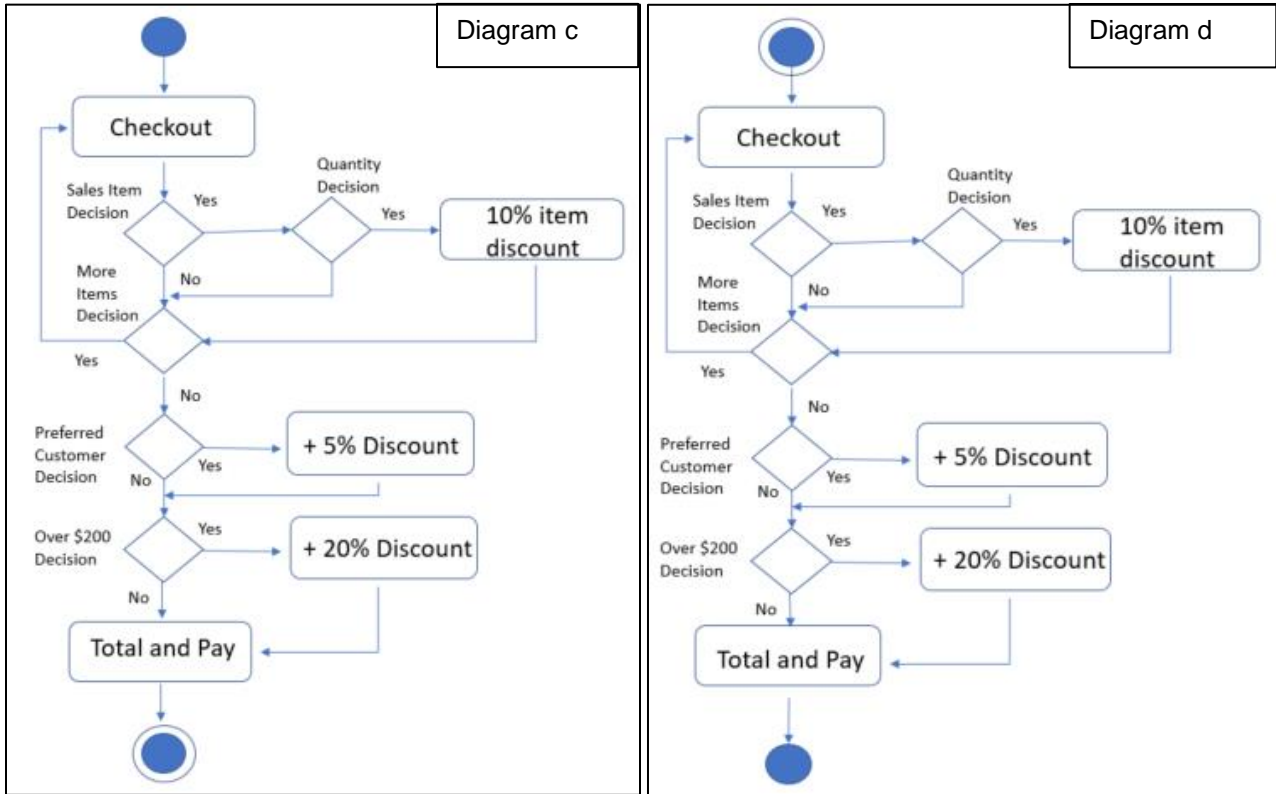
- a. It requires a particular syntax in the user stories, which requires all user stories to be written in the same way
- b. It takes the written user stories as input and converts the stories to executable text
- c. It creates models that can help share a common understanding of what the software should do
- d. It creates models that test that the acceptance criteria are clear and complete

#8. You are working on an application that determines the proper amount to charge for an item at a point of sale (POS) machine. The rules are shown in the following decision table.

Preferred customer	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N	N
Sales item	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	N	N
Quantity requirement met	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N	N
Over \$200 spent	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	N
Preferred discount 5%	Y	Y	Y	Y	Y	Y	Y	Y									
Sales discount 10% on item	Y	Y							Y	Y							
Over \$200 discount 20%	Y		Y		Y		Y		Y		Y		Y		Y		

Which of the following workflow-based models is correct for these requirements?



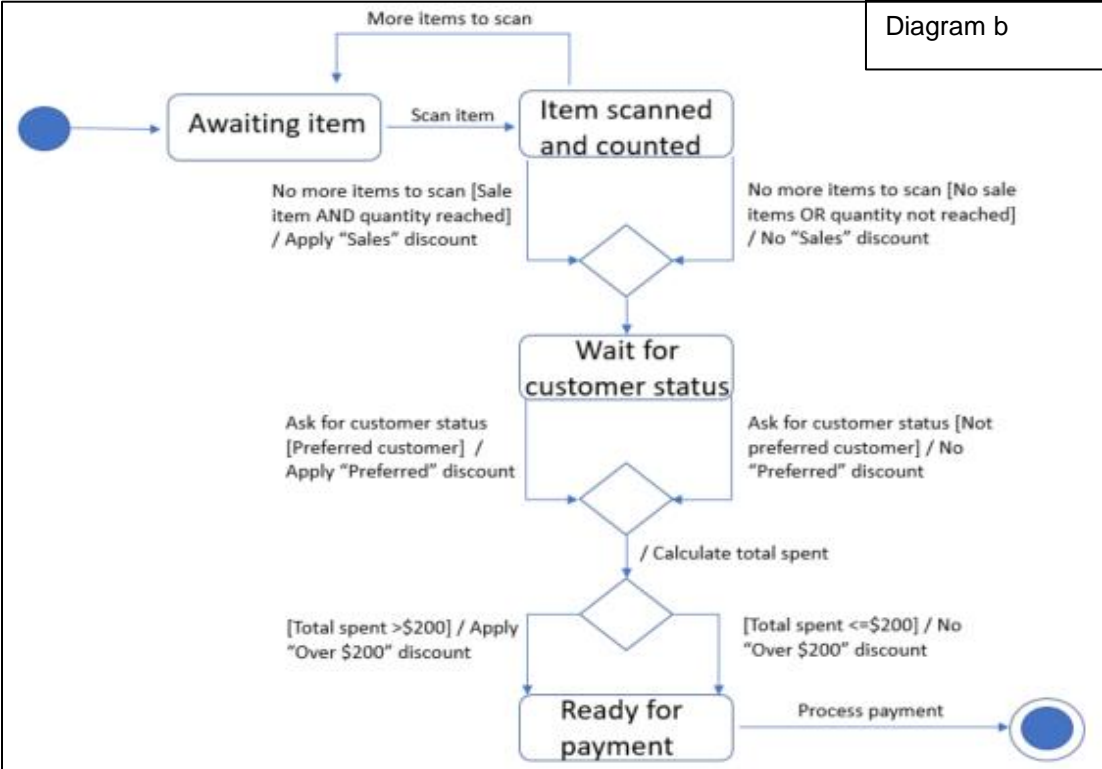
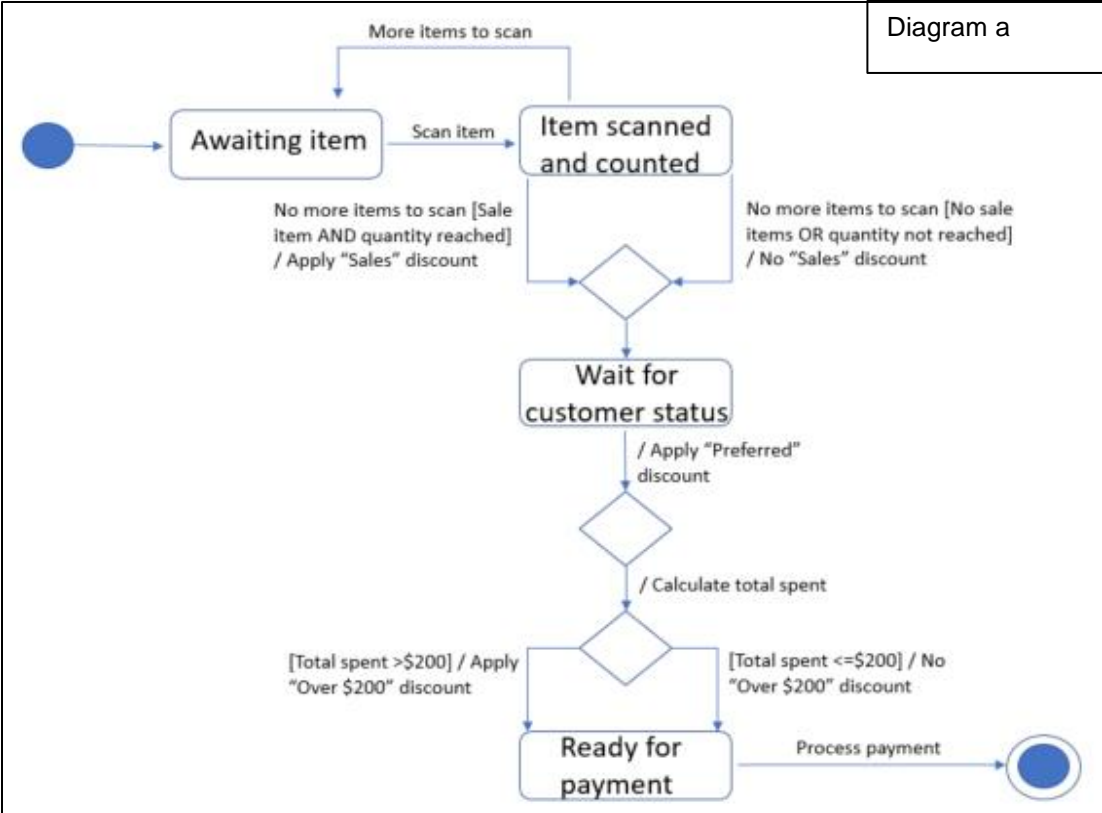


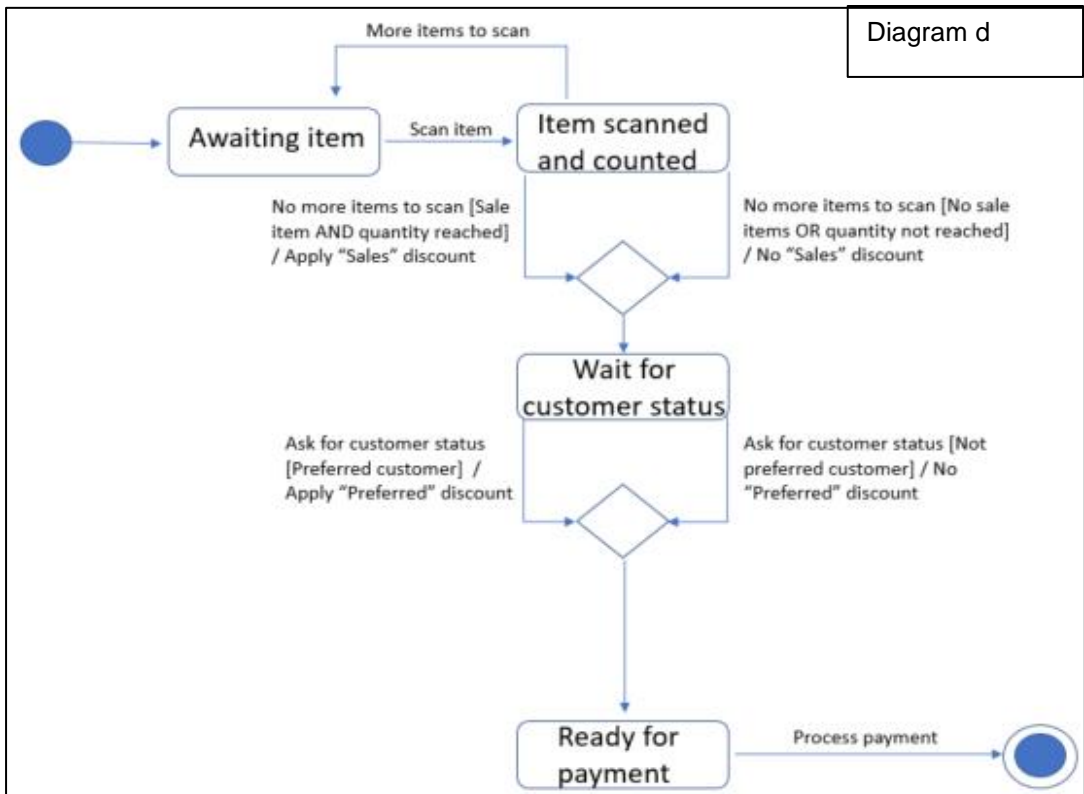
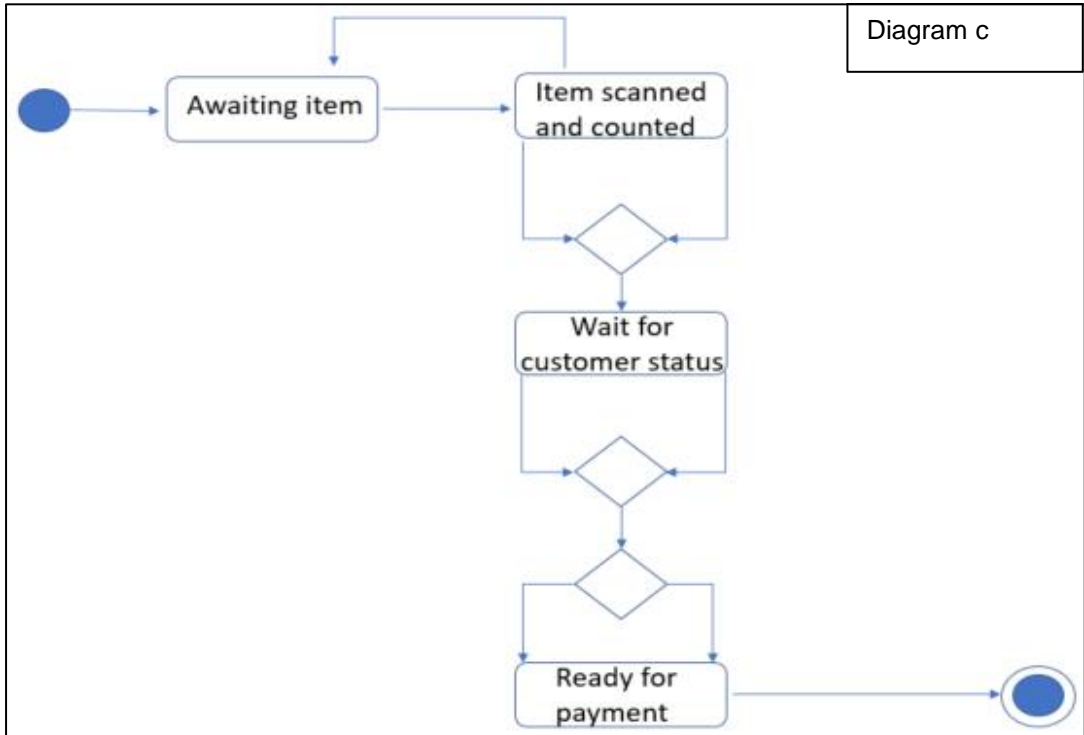
- a. Diagram a
- b. Diagram b
- c. Diagram c
- d. Diagram d

#9. You are working on an application that determines the proper amount to charge for an item at a point of sale (POS) machine. The rules are shown in the following decision table.

Preferred customer	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	N	N	N	N	N
Sales item	Y	Y	Y	Y	N	N	N	N	Y	Y	Y	Y	N	N	N	N
Quantity requirement met	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N	Y	Y	N	N
Over \$200 spent	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
Preferred discount 5%	Y	Y	Y	Y	Y	Y	Y	Y								
Sales discount 10% on item	Y	Y							Y	Y						
Over \$200 discount 20%	Y		Y		Y		Y		Y		Y		Y		Y	

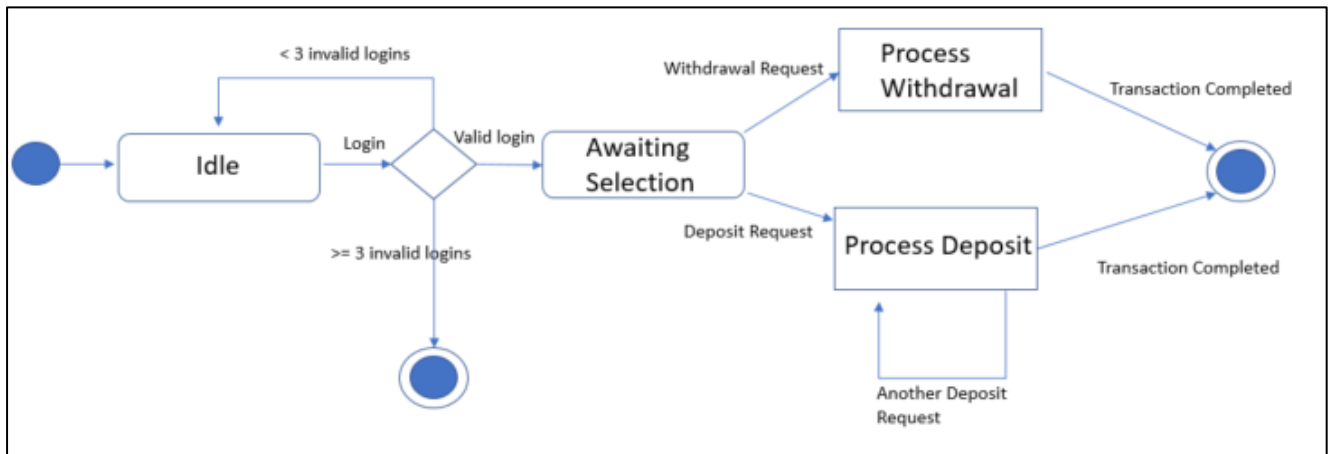
Which of the following state-based models is correct for these requirements?





- a. Diagram a
- b. Diagram b
- c. Diagram c
- d. Diagram d

#10. What are the subject and focus of this model?



- a. System/Behavior
- b. System/Structure
- c. Environment/Behavior
- d. Data/Structure

#11. You are creating a usage model that describes the behavior of a user with the test objective being to gain confidence that the test object will be suitable for the expected usage by the user. What are the subject and focus of the model?

- a. Environment; Behavior
- b. System; Behavior
- c. Behavior; System
- d. Data; Behavior

#12. If a model uses a modeling language that is defined by grammar rules, which of the following is the correct way to categorize the language?

- a. By its concepts
- b. By its syntax
- c. By its semantics
- d. By its grammar

#13. A modeling language that uses BPMN is an example of which category of modeling language?

- a. Languages for structural models
- b. Languages for data models
- c. Languages for behavioral models
- d. Languages for theoretical models

#14. What is another term for pragmatic quality?

- a. Correctness
- b. Validity
- c. Suitability
- d. Efficiency

#15. What is the result of putting too many details in the MBT model?

- a. There is too much abstraction
- b. There is not enough abstraction
- c. Test objectives will be met with fewer test cases
- d. Test objectives will require more test cases

#16. You have a need to be able to automatically generate tests for a specific requirement or a selected set of requirements. To enable this capability, what must you build into the model?

- a. Impact analysis
- b. Traceability
- c. Regression assessment
- d. Coverage

#17. Should model authors be encouraged to use similar syntax and semantics?

- a. Yes, this will improve the readability of the models for all stakeholders
- b. Yes, this will improve the execution speed of the new models
- c. No, this will unreasonably restrict the authors and may result in inefficiencies
- d. No, the set of syntactic and semantic rules should be ever-expanding to provide the most flexibility in model creation

#18. Which of the following is the best practice to use to conduct validation and verification testing?

- a. Use the requirements models to create the MBT model
- b. Use the business process models to create the MBT model
- c. Use the system design models as a start and then add more model elements to cover additional scenarios
- d. Use testing knowledge as the basis to build the MBT model rather than using the system design models

#19. What is the name of a tool that can execute different paths through a model to validate it?

- a. Model validator
- b. Model checker
- c. Model tester
- d. Model simulator



#20. Which of the following is a good way to handle complex models that may span multiple diagrams?

- a. Simplify the model down to a single diagram
- b. Separate the data creation from the test case creation
- c. Separate the aspects of the model into separate models that can be developed individually
- d. Conduct iterative development and reviews of the model and the generated test artifacts

#21. What is model coverage?

- a. The degree to which specific aspects of a model are covered by tests
- b. The degree to which a model covers the stated requirements
- c. The degree to which a testing model incorporates all the development models for a project
- d. The degree to which a model of behavior is covered during integration testing

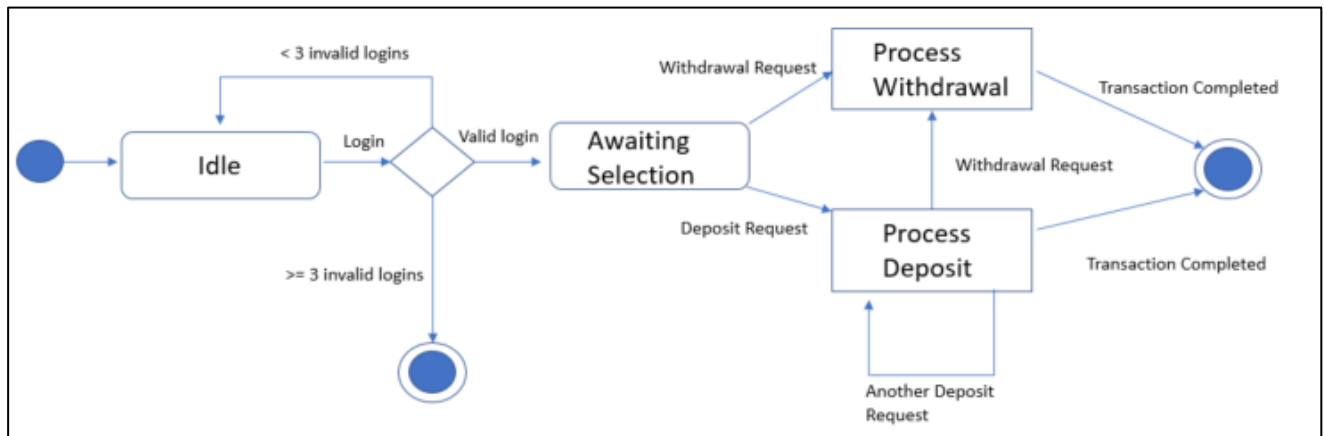
#22. What is often applied to limit test case explosion?

- a. Test reduction criteria
- b. Test removal criteria
- c. Test combination criteria
- d. Test selection criteria

#23. Which of the following is the basis used for MBT model elements test selection criteria?

- a. Boundary value analysis
- b. Pairwise analysis
- c. Selected requirements in the requirements specification linked to the model
- d. Activities and gateways in business process models

#24. What test cases are needed to achieve full path coverage (traverse all transitions and enter each state)? Loops only need to be tested once.



Idle = I, Awaiting Selection = A, Withdrawal = W, Deposit = D

- a. start, I, A, D, W, end
- b. start, I, I, I, end; start, I, A, D, D, W, end
- c. start, I, I, I, end; start, I, A, W, end; start, I, A, D, D, end; start, I, A, D, W, end
- d. start, I, end; start, I, I, I, end; start, I, A, W, D, D, W, end; start, I, A, D, D, W, end; start, I, A, W, D, end

#25. If you are using user stories to determine which test cases to select, what type of selection criteria are you using?

- a. Random
- b. Scenario-based
- c. Data-based
- d. Project-driven

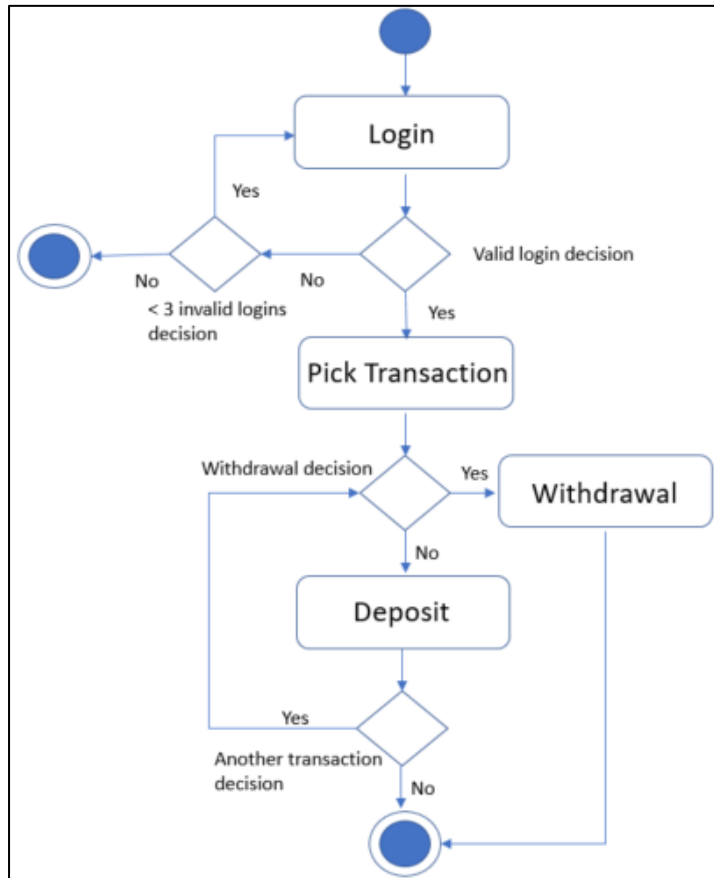
#26. Which of the following test selection criteria is applicable to a textual model?

- a. Every condition
- b. Equivalence partitions
- c. Decision coverage
- d. Activity coverage

#27. When automated test generation is used, what is the expectation for the generated test cases?

- a. The tests will need further manual processing before they are usable
- b. There are manual steps required to select the test cases, but they can be automatically executed
- c. The tests can be used as-is with no additional manual intervention
- d. The test data will be automatically created and can be combined with the test cases during execution

#28. For the workflow model shown below, what is the minimum number of partitions that should be tested to achieve 100% equivalence partition coverage?



- a. 2
- b. 4
- c. 7
- d. 9

#29. If you are trying to achieve all path coverage in an activity diagram, what is a likely problem of this approach?

- a. The tests may have no business meaning
- b. Test case explosion may occur during test generation
- c. It takes more time to define and maintain the scenarios
- d. Explicit linkage between the requirements and tests are needed

#30. How is the test adaptation layer used with MBT?

- a. It adapts the requirements to align with the model
- b. It bridges the abstraction gap between the generated tests and executable tests
- c. It modifies the model to ensure the tests will be generated in a form suitable to the system under test
- d. It provides a translation layer that converts the executable tests into machine language

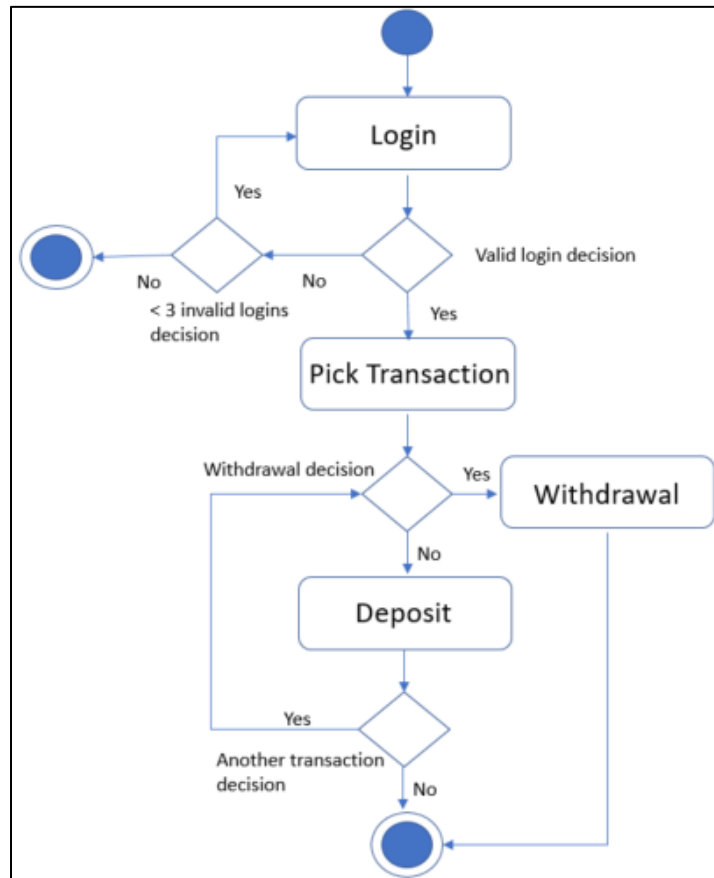
#31. Which of the following is a characteristic of an abstract test case?

- a. The data values are defined by equivalence partitions without specifying the value in a partition
- b. The test results have defined data values
- c. All the test steps are defined
- d. The test case contains all the information necessary for it to be executed by a tester

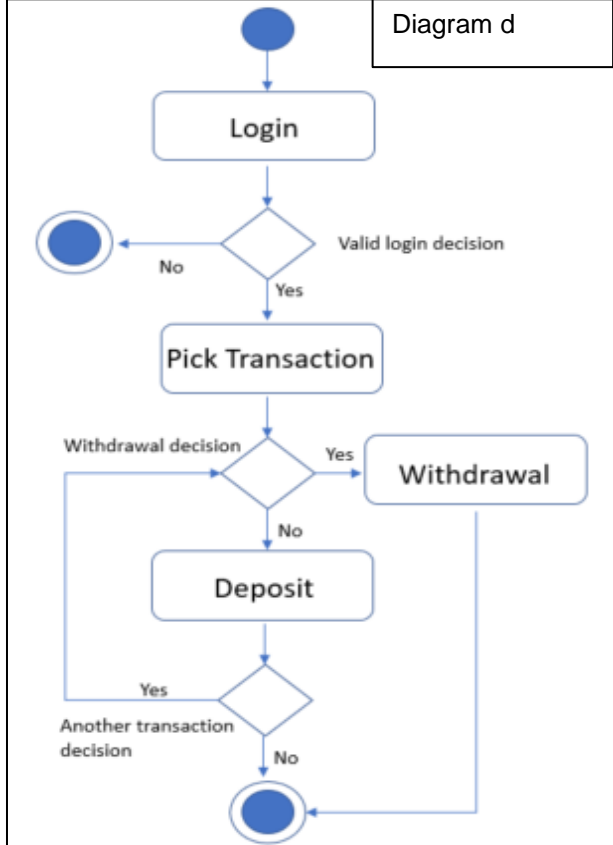
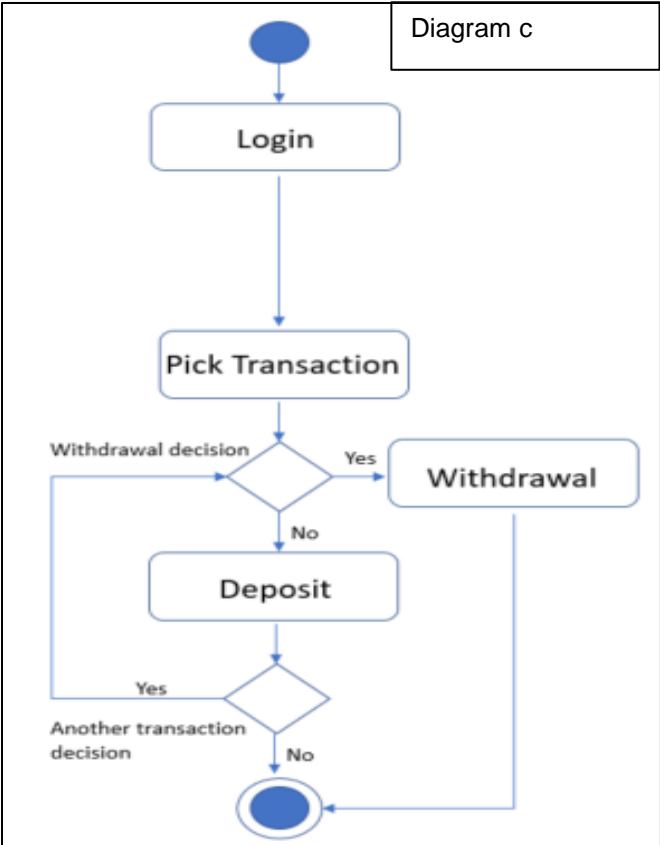
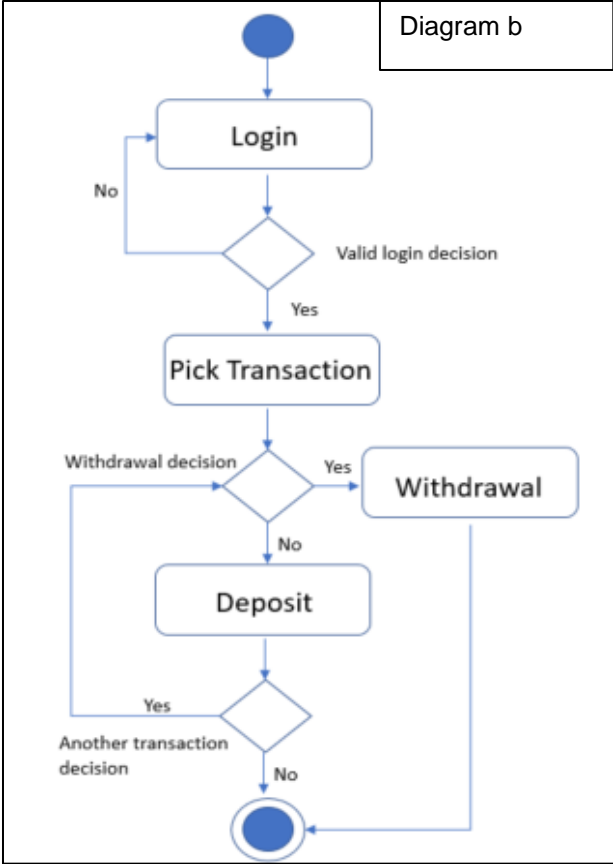
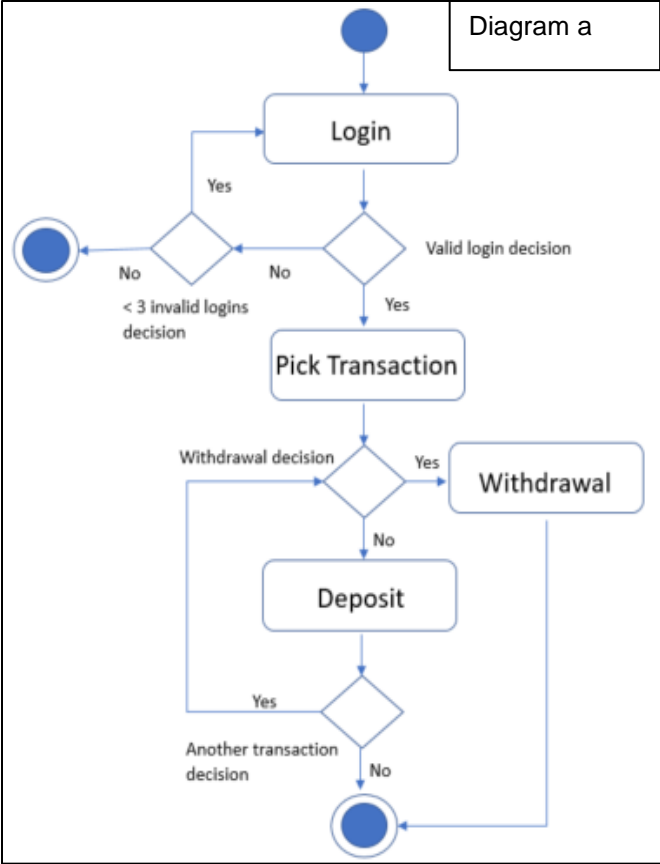
#32. Which approaches use the adaptation layer?

- a. Adaptation and transformation
- b. Transformation and mixed
- c. Mixed and adaptation
- d. Adaptation, transformation and mixed

#33. A requirement has changed for the model shown below.



The user will now be allowed to attempt to login as many times as they want. Which of the following is the correct model for this changed requirement?



- a. Diagram a
- b. Diagram b
- c. Diagram c
- d. Diagram d

#34. You are working with an MBT approach that generates and executes the scripts one step at a time. This allows the result from each execution to be used to determine the next script to be executed. In order to create this flexibility, what must be set up in each script?

- a. Post-conditions
- b. Pre-conditions
- c. Data creation
- d. Data clean-up

#35. In what way does early defect detection improve the ROI of MBT?

- a. It actually doesn't because early defect detection reduces the ROI
- b. Early defect detection provides a more robust MBT and saves later maintenance costs
- c. Finding defects during early test design reduces the overall cost of quality for a project
- d. Integrating the defect finding with the defect management system increases the project costs

#36. Which of the following is an example of how MBT can improve communication?

- a. By generating the test cases automatically
- b. By reducing the number and severity of human errors
- c. By providing an abstraction level that will allow all stakeholders to understand the tests
- d. By enabling the tester's mindset and encouraging independence

#37 Which of the following is a metric that can be tracked for MBT activity?

- a. Number of lines of code per defect
- b. Cyclomatic complexity
- c. Stakeholder satisfaction
- d. Number of defects found in the requirements

#38. What is an important characteristic of an effective use of MBT within the Agile SDLC?

- a. The MBT artifacts should be traceable in the backlog management tool
- b. Test case versioning is not used, allowing any test to be run with any version of the code
- c. Configuration management is limited to the adaptation layer as only that layer is affected by versioning
- d. Configuration management of the MBT artifacts is optional

#39. Which of the following can be both an initial and running cost of MBT?

- a. Licensing of the tools
- b. Archiving MBT artifacts
- c. Refactoring MBT models
- d. Evaluating MBT approaches and tools

#40. In what way should the MBT tool integrate with the test automation framework?

- a. It should use the test adaptation layer provided by the test automation framework
- b. It should leverage the model simulator in the test automation framework
- c. It should store the requirements derived from the model in the test automation framework
- d. It should acquire the known defects from the test automation framework