# SRM VALLIAMMAI ENGINEERING COLLEGE

(An Autonomous Institution)

SRM Nagar, Kattankulathur – 603 203

## DEPARTMENT OF INFORMATION TECHNOLOGY

**QUESTION BANK**

**VIII SEMESTER**

**1908014- SOFTWARE TESTING**

**Regulation – 2019**

**Academic Year 2022– 2023 (Even Semester)**

*Prepared by*

**Ms.S.Sandhya, AP(Sr.G)/IT**

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**DEPARTMENT OF INFORMATION TECHNOLOGY**

## QUESTION BANK

**SUBJECT CODE& NAME: 1908014 SOFTWARE TESTING**

**SEM / YEAR: VIII / IV**

**UNIT I - INTRODUCTION**

Testing as an Engineering Activity – Testing as a Process – Testing axioms – Basic definitions – Software Testing Principles – The Tester's Role in a Software Development Organization – Origins of Defects – Cost of defects – Defect Classes – The Defect Repository and Test Design – Defect Examples – Developer/Tester Support of Developing a Defect Repository

**PART - A**

| Q.no | Questions | BTL | Competence |
|---|---|---|---|
| 1 | List out the levels of the testing maturity model. | BTL-1 | Remembering |
| 2 | Define fault and failure. | BTL-1 | Remembering |
| 3 | What are the sources of defects? | BTL-2 | Understanding |
| 4 | Mention the objective of software testing. | BTL-1 | Remembering |
| 5 | Differentiate verification and validation. | BTL-4 | Analyzing |
| 6 | Mention the role of process in software quality. | BTL-4 | Analyzing |
| 7 | Point out the role of defect Repository. | BTL-4 | Analyzing |
| 8 | How would you classify the types in defect classes? | BTL-3 | Applying |
| 9 | Tell about test, test Oracle and Test Bed. | BTL-1 | Remembering |
| 10 | List the members of the critical groups in testing process. | BTL-2 | Understanding |
| 11 | List the element of the engineering disciplines | BTL-1 | Remembering |
| 12 | Compare the process of testing and debugging. | BTL-5 | Evaluating |
| 13 | What is meant by feature defects? | BTL-2 | Understanding |
| 14 | Why test cases should be developed for both valid and invalid inputs? | BTL-5 | Evaluating |
| 15 | Mention the role of test engineer in software development organization. | BTL-2 | Understanding |
| 16 | How would formulate the cost of defect? | BTL-6 | Creating |
| 17 | Explain some of the quality metric attributes. | BTL-3 | Applying |
| 18 | What is a defect? Give example? | BTL-2 | Understanding |
| 19 | Summarize the major components in software development process. | BTL-3 | Applying |
| 20 | Error Vs Defect Vs Failure. Discuss | BTL-4 | Analyzing |
| 21 | Define process in the context of software quality. | BTL-1 | Remembering |
| 22 | Identify the elements of the engineering disciplines. | BTL-3 | Applying |
| 23 | Interpret the generic ways for preventing the defects. | BTL-5 | Evaluating |
| 24 | Formulate the tools for blocking the errors. | BTL-6 | Creating |

**PART-B**

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Elaborate on the principles of software testing. | 13 | BTL-4 | Analyzing |
| 2 | (a) Describe about the components of software development process. | 06 | BTL-1 | Remembering |
| | (b) List and discuss the technological developments that are causing | 07 | BTL-1 | |

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| | organizations to revise their approach to testing. | | | |
| 3 | Write short notes on the list given below<br>(a) Cost of defect.<br>(b) Elements of Engineering disciplines | <br>06<br>07 | BTL-5 | Evaluating |
| 4 | (a) Discuss in detail about the testing axioms.<br>(b) Explain defect classification in detail. | 06<br>07 | BTL-2 | Understanding |
| 5 | (a) Write short notes on Origins of defects.<br>(b) Explain the various origins of defects. Explain the major classes of defects in the software artifacts. | 07<br>06 | BTL-5 | Evaluating |
| 6 | Short notes on a) Precision and accuracy b) Verification and validation | 6+7 | BTL-2 | Understanding |
| 7 | (a) Explain in detail about defect repository.<br>(b) Analyze the Role of process in Software quality. | 06<br>07 | BTL-4 | Analyzing |
| 8 | Why it is important to meticulously inspect test result and discover the drawbacks incase if you fail to inspect? Illustrate with example? | 13 | BTL-3 | Applying |
| 9 | Give an Overview of the Testing Maturity Model(TMM) & the test related activities that should be done for V-model architecture. | 13 | BTL-4 | Analyzing |
| 10 | (a) Describe the various software testing activities.<br>(b) Define correctness, reliability, integrity, interoperability. Discuss how these are related to testing | 06<br>07 | BTL-1 | Remembering |
| 11a | (a) Why it is necessary to develop test cases for both valid and invalid input condition?<br>(b) How important to document a product? How will you test requirement and design document? | 06<br>07 | BTL-6 | Creating |
| 12 | Compare and contrast terms errors faults and failures using suitable examples. | 13 | BTL-5 | Evaluating |
| 13 | Write the major needs of testing and model of testing in details | 13 | BTL-1 | Remembering |
| 14 | Explain in detail processing and monitoring of the defects with defect repository? | 13 | BTL-4 | Analyzing |
| 15 | Illustrate in detail about the taxonomy of bugs. | 13 | BTL-2 | Understanding |
| 16 | Identify the attributes of defect and generic ways to prevent defects. | 13 | BTL-3 | Applying |
| 17 | Recall the basic terms used in software engineering that are based on IEEE standard. | 13 | BTL-1 | Remembering |

**PART-C**

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Explain in detail how developer / tester support to develop a defect repository? | 15 | BTL-6 | Creating |
| 2 | Discuss the tester role in software development organization. | 15 | BTL-6 | Creating |
| 3 | Suppose you are testing defect coin problem artifacts, Identify the causes of various defects. What steps could have been taken to prevent the various classes of defects? | 15 | BTL-5 | Evaluating |
| 4 | Give the internal structure of TMM and explain about its maturity goals at each level | 15 | BTL-5 | Evaluating |
| 5 | Describe the test related activities using V model in requirement specification, design and installation phases. | 15 | BTL-5 | Evaluating |

## UNIT II - TEST CASE DESIGN STRATEGIES

Test case Design Strategies – Using Black Box Approach to Test Case Design – Boundary Value Analysis – Equivalence Class Partitioning – State based testing – Cause-effect graphing – Compatibility testing – user documentation testing – domain testing - Random Testing – Requirements based testing – Using White Box Approach to Test design – Test Adequacy Criteria – static testing vs. structural testing – code functional testing – Coverage and Control Flow Graphs – Covering Code Logic – Paths – code complexity testing – Additional White box testing approaches- Evaluating Test Adequacy Criteria.

### PART - A

| Q.No | Questions | BTL | Competence |
|---|---|---|---|
| 1 | List the advantages of Equivalence class partitioning. | BTL-1 | Remembering |
| 2 | Show the need of code functional testing in test case design. | BTL-3 | Applying |
| 3 | Create the equivalence classes in testing the program for quadratic equation solution. | BTL-6 | Creating |
| 4 | Write the two basic testing strategies used to design test cases. | BTL-5 | Evaluating |
| 5 | Define COTS components. | BTL-2 | Understanding |
| 6 | List some of the advantages of documentation testing and domain testing. | BTL-1 | Remembering |
| 7 | Compare black box and white box testing. | BTL-2 | Understanding |
| 8 | Tell the steps involved in developing test cases with a cause- and-effect graph. | BTL-1 | Remembering |
| 9 | Tabulate the black box methods and knowledge sources. | BTL-1 | Remembering |
| 10 | Can you classify the compatibility testing and explain? | BTL-4 | Analyzing |
| 11 | How mutation testing helpful in testing the software? | BTL-5 | Evaluating |
| 12 | Define code complexity testing .How it is related to testing? | BTL-3 | Applying |
| 13 | Point out the difference of static testing from structural testing. | BTL-4 | Analyzing |
| 14 | What do you meant by test adequacy criteria?. | BTL-2 | Understanding |
| 15 | List white box knowledge source and testing methods. | BTL-1 | Remembering |
| 16 | What is boundary value analysis? | BTL-1 | Remembering |
| 17 | Discuss about Desk checking. | BTL-2 | Understanding |
| 18 | Sketch the control flow graph for an ATM withdrawal system. | BTL-6 | Creating |
| 19 | How would you calculate cyclomatic complexity? | BTL-4 | Analyzing |
| 20 | What are the factors affecting less than 100% degree of coverage. | BTL-4 | Analyzing |
| 21 | List the various iterations of loop testing. | BTL-2 | Understanding |
| 22 | Identify the need of test adequacy criteria. | BTL-3 | Applying |
| 23 | Organize the different types of functional testing. | BTL-3 | Applying |
| 24 | Assess end to end testing. | BTL-5 | Evaluating |

### PART-B

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Explain about the following methods of black box testing with example<br>(a) Equivalence class partitioning<br>(b) Boundary value analysis. | 06<br>07 | BTL-4 | Analyzing |
| 2 | Write a note on the following<br>(a) Positive and Negative Testing<br>(b) Decision Tables | 06<br>07 | BTL-2 | Understanding |
| 3 | Write short notes on the list given below<br>(a) Compatibility testing<br>(b) Documentation testing | 06<br>07 | BTL-1 | Remembering |
| 4 | With suitable example describe how cause-and–effect graphing and state transition testing is done. | 13 | BTL-1 | Remembering |
| 5 | What approach would you use for testing strategies? Explain in detail. Show how black box testing is performed in COTS components? | 13 | BTL-3 | Applying |

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| 6 | Describe the following<br>(a) State based testing<br>(b) Domain testing | 06<br>07 | BTL-3 | Applying |
| 7 | What inference can you make from random testing, requirement based testing and domain testing explains? | 13 | BTL-4 | Analyzing |
| 8 | Explain the various white box techniques with suitable test cases. | 13 | BTL-4 | Analyzing |
| 9 | Summarize the role of Oaths in white box testing and explain any two white box testing design. | 13 | BTL-5 | Evaluating |
| 10 | Explain the various axioms that allow testers to evaluate Test Adequacy Criteria. | 13 | BTL-5 | Evaluating |
| 11 | (a) Outline the steps in constructing a control flow graph and computing Cyclomatic complexity with an example.<br>(b) Explain about state transition testing. | 06<br>07 | BTL-2 | Understanding |
| 12 | (a) Discuss in detail about code coverage testing.<br>(b) Explain mutation testing with an example. | 06<br>07 | BTL-2 | Understanding |
| 13 | Explain the significance of Control flow graph and Cyclomatic complexity in white box testing with a pseudo code for sum of positive numbers. Also mention the independent paths with test cases. | 13 | BTL-6 | Creating |
| 14 | Discuss in detail about static testing and structural testing .Also write the difference between these testing concepts | 13 | BTL-1 | Remembering |
| 15 | Mention at least four test case design strategies and explain them in detail. | 13 | BTL-1 | Remembering |
| 16 | Suppose you are testing defect coin problem artifacts. Identify the causes of various defects. What steps could have been taken to prevent the various classes of defects. | 13 | BTL-3 | Applying |
| 17 | With a sample flow chart, detail different ways to find the number of test cases necessary to do the testing of a code using white box testing approach. | 13 | BTL-2 | Understanding |

**PART-C**

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Demonstrate the various black box test cases using Equivalence class partitioning and boundary values analysis to test a module for payroll System | 15 | BTL-6 | Creating |
| 2 | Explain how the covering code logic and paths are used in the role of white box design with suitable example. | 15 | BTL-5 | Evaluating |
| 3 | Demonstrate the various black box test cases using Equivalence class partitioning and boundary values analysis to test a module for ATM system. | 15 | BTL-6 | Creating |
| 4 | Explain the basis path testing. State the principles of control flow graph and cyclomatic complexity. What are the formulas used in cyclomatic complexity? | 15 | BTL-4 | Analyzing |
| 5 | Differentiate end to end testing and functional testing. When to apply end to end testing and detail various methods of end to end testing. | 15 | BTL-5 | Evaluating |

## UNIT III - LEVELS OF TESTING

The need for Levels of Testing – Unit Test – Unit Test Planning – Designing the Unit Tests – The Test Harness – Running the Unit tests and Recording results – Integration tests – Designing Integration Tests – Integration Test Planning – Scenario testing – Defect bash elimination System Testing – Acceptance testing – Performance testing – Regression Testing – Internationalization testing – Ad-hoc testing – Alpha, Beta Tests – Testing OO systems – Usability and Accessibility testing – Configuration testing –Compatibility testing – Testing the documentation – Website testing.

### PART – A

| Q.No | Questions | BTL | Competence |
|---|---|---|---|
| 1 | Give the most effective ad hoc testing techniques. | BTL-2 | Understanding |
| 2 | What is security testing give the examples. | BTL-2 | Understanding |
| 3 | Show the approaches you use to do website testing. | BTL-3 | Applying |
| 4 | Can you judge on the reason for system testing? | BTL-5 | Evaluating |
| 5 | List out the objectives of configuration testing. | BTL-1 | Remembering |
| 6 | Analyze on when to do the regression testing and smoke testing? | BTL-4 | Analyzing |
| 7 | Compare functional Testing from non-functional Testing. | BTL-4 | Analyzing |
| 8 | Define unit Test. Give example. | BTL-1 | Remembering |
| 9 | Show the test cases applied for acceptance testing. | BTL-3 | Applying |
| 10 | List out the types of system Testing | BTL-6 | Creating |
| 11 | Compare and contrast Alpha and Beta Testing. | BTL-2 | Understanding |
| 12 | How could you classify the methodology for performance testing? | BTL-4 | Analyzing |
| 13 | Can you prepare the role of test data generators in testing object oriented system. | BTL-6 | Creating |
| 14 | Classify the activities of defect bash. | BTL-3 | Applying |
| 15 | Define test harness and Why is it important to design test harness for testing? | BTL-4 | Analyzing |
| 16 | List the levels of Testing. | BTL-1 | Remembering |
| 17 | Summarize the importance to design a test harness for reusability. | BTL-5 | Evaluating |
| 18 | What is the advantage of Bottom up integration? | BTL-2 | Understanding |
| 19 | Based on what plan the scenario testing is done? | BTL-1 | Remembering |
| 20 | What is stress testing? | BTL-2 | Understanding |
| 21 | Construct a test case with an example. | BTL-3 | Applying |
| 22 | Brief the importance of test plan in software testing. | BTL-5 | Evaluating |
| 23 | What is scenario testing? | BTL-1 | Remembering |
| 24 | Who are all involved in acceptance testing? Comment. | BTL-1 | Remembering |

### PART-B

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Explain the different integration testing strategies for procedures and functions with suitable diagrams. | 13 | BTL-4 | Analyzing |
| 2 | How would you identify the hardware and software for configuration testing and Explain what testing techniques applied for website testing? | 13 | BTL-5 | Evaluating |
| 3 | State unit test and describe about planning and designing of unit test | 13 | BTL-2 | Understanding |
| 4 | Explain the various units in a program considered for unit testing. | 13 | BTL-4 | Analyzing |
| 5 | Differentiate alpha testing from beta testing and discuss in detail about the phases in which alpha and beta testing is done ,In what way it is related to milestone and deliverable. | 13 | BTL-4 | Analyzing |
| 6 | Summarize the issues that arise in class testing and explain about compatibility and documentation testing. | 13 | BTL-2 | Understanding |
| 7 | Determine and prepare the test cases for acceptance usability and | 13 | BTL-6 | Creating |

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| | accessibility testing. | | | |
| 8 | (a)Describe in detail about the internationalization testing and its designing and planning.<br>(b)Present an outline of testing object oriented systems | 6+7 | BTL-2 | Understanding |
| 9 | Discuss the need for various levels of testing. | 13 | BTL-1 | Remembering |
| 10 | How would you classify integration testing and system testing? | 13 | BTL-3 | Applying |
| 11 | Describe in detail about scenario testing and performance testing. | 13 | BTL-1 | Remembering |
| 12 | (a). Why is it so important to design a test harness for reusability and show the approach you used for running the unit test and recording the results?<br>(b). Tabulate the key difference in integrating procedural oriented system as compared to object oriented systems. | 6+7 | BTL-3 | Applying |
| 13 | (a) Describe "The Class as a Testable Unit" in detail.<br>(b) Explain the planning, design and execution of unit tests. | 6+7 | BTL-1 | Remembering |
| 14 | (a)Explain about the various types of System Testing and its importance with example.<br>(b)What is regression testing? Outline the issues to be addressed for developing test cases to perform regression testing. | 6+7 | BTL-2 | Understanding |
| 15 | Discuss in detail about various levels of testing along with planning and designing test cases in each one of them. | 13 | BTL-1 | Remembering |
| 16 | (a) Explain about the unit test planning.<br>(b) Explain about configuration testing and its objectives. | 7<br>6 | BTL-3 | Applying |
| 17 | Explain the popular acceptance test criteria and explain them. | 13 | BTL-5 | Evaluating |

**PART-C**

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | (a) Write the importance of security testing and explain the consequences of security breaches, also write the various areas which have to be focused on during security testing.<br>(b) State the need for integration testing in procedural code. | 08<br>07 | BTL-5 | Evaluating |
| 2 | Case Study: Several kinds of tests for a web application.<br>Abstract:<br>A UK based company entrusted us to test this project. Its a web application for government to collect data and calculate them to prioritize all the tasks.<br>Description:<br>This client is from Hertfordshirts in UK, the project is an application for the government. In fact, it includes two parts: web site for data collection and presentation purpose, in parallel a windows application for administration purpose. Here the task is ensuring the quality of the web application, includes many aspects, such as function correctness performance acceptance, UI appropriateness and so on. Moreover, for testing function, we had to use the windows application to edit user's services and other data.<br>The client only gave us the software requirement specification and the applications tested, there was not any test plan, test strategy, test cases, even test termination criterion. On the one hand, we had to spend much | 15 | BTL-6 | Creating |

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| | time in communicating with client to make clearly about some important points; on the other hand, we had to get familiar with the application via operating it and reading requirements.<br>Then, how to improve the efficiency of regression test? | | | |
| 3 | (a) What is security testing? Explain its importance.<br>(b) List the tasks that must be performed by the developer or tested during the preparation fort unit testing. | 07<br>08 | BTL-6 | Creating |
| 4 | (a)Describe the top-down and bottom-up approaches in integration testing discuss about the merits and limitation of these approaches<br>(b)Suppose you are developing an online system for a specific vendor of the electronic equipment with all the necessary features to run the Shop. Write down a detailed test plan by including the necessary components | 10<br>5 | BTL-5 | Evaluating |
| 5 | Assess the role of test data generators in testing object oriented system and explain object oriented system. | 15 | BTL-5 | Evaluating |

## UNIT IV - TEST MANAGEMENT

People and organizational issues in testing – Organization structures for testing teams – testing services – Test Planning – Test Plan Components – Test Plan Attachments – Locating Test Items – test management – test process – Reporting Test Results – Introducing the test specialist – Skills needed by a test specialist – Building a Testing Group- The Structure of Testing Group- .The Technical Training Program.

## PART - A

| Q.no | Questions | BTL | Competence |
|---|---|---|---|
| 1 | Mention the duties of component-wise testing teams. | BTL-1 | Remembering |
| 2 | Analyze the various steps in forming the test group. | BTL-4 | Analyzing |
| 3 | Analyze on few typical resources that are considered when test planning. | BTL-4 | Analyzing |
| 4 | Give the need of test plan components | BTL-2 | Understanding |
| 5 | Point out the five stages in a test plan process. | BTL-4 | Analyzing |
| 6 | Classify various approaches to test cost estimation. | BTL-3 | Applying |
| 7 | What is the function of Test Transmittal report or Locating Test Items? | BTL-1 | Remembering |
| 8 | Can you make a distinction between structures of single- product companies and multi-product? | BTL-2 | Understanding |
| 9 | What is the need of Test incident Report? | BTL-3 | Applying |
| 10 | Name the test plan components. | BTL-1 | Remembering |
| 11 | What is test log? | BTL-1 | Remembering |
| 12 | Show test case specification. | BTL-3 | Applying |
| 13 | Can you judge the three essential elements of test infrastructure management? | BTL-5 | Evaluating |
| 14 | Summarize the success factors for testing organization. | BTL-2 | Understanding |
| 15 | Analyze the role of manager in support of test group. | BTL-4 | Analyzing |
| 16 | List the various skills needed by a test specialist. | BTL-1 | Remembering |
| 17 | How would you estimate the measurements for monitoring error, faults and failures? | BTL-5 | Evaluating |
| 18 | Write the reason to create Work Breakdown Structure (WBS). | BTL-6 | Creating |
| 19 | How would you prepare testing and development function? | BTL-6 | Creating |
| 20 | Define Test Summary Report | BTL-2 | Understanding |
| 21 | What are the three critical groups in testing planning and test planning policy? | BTL-1 | Remembering |
| 22 | Summarize some of the personal and managerial skills required by a test specialist. | BTL-2 | Understanding |

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|---|---|---|---|
| 23 | Identify the term milestones. | BTL-3 | Applying |
| 24 | Evaluate the WBS elements for testing. | BTL-5 | Evaluating |

**PART-B**

| Q.no | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Compare and contrast the role of debugging goals and policies in testing | 13 | BTL-5 | Evaluating |
| 2 | (a) What factors would an organization take into account to decide the fitness of a product for release?<br>(b) Can the Defect Repository be accessible by customers? If so, what security aspects would you have to take into account? | 06<br>07 | BTL-4 | Analyzing |
| 3 | Demonstrate the test management based on standards infrastructure, people and product. | 13 | BTL-3 | Applying |
| 4 | Differentiate between the effect of globalization and geographically distributed team in product testing? | 13 | BTL-4 | Analyzing |
| 5 | Illustrate various components of test plan with example. | 13 | BTL-2 | Understanding |
| 6 | What are the role of groups in policy development and test reporting? | 13 | BTL-4 | Analyzing |
| 7 | (a) Name the reports of the test results and the contents available in each test reports.<br>(b) What is Test Status Report? And How to report test status? | 06<br>07 | BTL-6 | Creating |
| 8 | Identify the role user/client play in the development of test plan for a project? Should they be present at any of the test plan reviews? Justify your answer. | 13 | BTL-5 | Evaluating |
| 9 | (a)Discuss the advantages and disadvantages of having an independent test group, that is one that is a separate organizational entity with its own reporting structure<br>(b)Why is it so important to integrate testing activities into the software life cycle? | 06<br>07 | BTL-1 | Remembering |
| 10 | Explain in detail about Testing goals and Policy.<br>Explain the role of the Three critical groups Test Planning. | 06<br>07 | BTL-3 | Applying |
| 11 | Describe the concepts of building a test group. | 13 | BTL-2 | Understanding |
| 12 | (a) Demonstrate on various stages of test plan.<br>(b) Illustrate the role of testing. | 06<br>07 | BTL-3 | Applying |
| 13 | Explain the following test related documents and its components.<br>(a)Test Case Specification<br>(b) Test Incident Report | 06<br>07 | BTL-1 | Remembering |
| 14 | Explain the concepts of test planning in detail .Also mention the way of defining test plan. | 13 | BTL-2 | Understanding |
| 15 | Explain in detail about the organization structures of testing teams in single product and multi product companies along with their advantages. | 13 | BTL-1 | Remembering |
| 16 | What is the role of groups in policy development and test reporting? Give example. | 13 | BTL-1 | Remembering |
| 17 | Compare and contrast the role of debugging goals and policies in testing. | 13 | BTL-2 | Understanding |

**PART-C**

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|

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|---|---|---|---|---|
| 1 | Write the technological development that causes organizations to revise their approach to testing, also write the criteria and methods involved while establishing a testing policy. | 15 | BTL-5 | Evaluating |
| 2 | (a) Discuss testing team structures for a single product companies<br>(b) What are the skills needed for test specialist. | 08<br>07 | BTL-5 | Evaluating |
| 3 | Develop the challenges and issues faced in testing service organization also write how we can eliminate challenges. | 15 | BTL-6 | Creating |
| 4 | (a) Write any four recommended test related documents in details.<br>(b) Discuss the different process activities of software testing in detail. | 08<br>07 | BTL-5 | Evaluating |
| 5 | Assume you are working in an on-line fast food restaurant system. The system reads customer orders. Relays orders to the kitchen, calculates the customer's bill and give change. It also maintains inventory information. Each wait person has a terminal. Only authorized wait persons and a system administrator can access the system. Describe the tests that are suitable to test the application. | 15 | BTL-6 | Creating |

## UNIT V - TEST AUTOMATION

Software test automation – skills needed for automation – scope of automation – design and architecture for automation – requirements for a test tool – challenges in automation – Test metrics and measurements – project, progress and productivity metrics.

### PART - A

| Q.no | Questions | BTL | Competence |
|---|---|---|---|
| 1 | Express the framework for test automation | BTL-2 | Understanding |
| 2 | Discover the objectives of testing. | BTL-3 | Applying |
| 3 | Classify the types of test defect metrics. | BTL-3 | Applying |
| 4 | Mention the challenges in automation. | BTL-1 | Remembering |
| 5 | Mention the criteria's for selecting test tools. | BTL-1 | Remembering |
| 6 | What are the goals of Reviewers? | BTL-1 | Remembering |
| 7 | Outline the need for test metrics &Give any two metrics | BTL-2 | Understanding |
| 8 | Define test automation | BTL-1 | Remembering |
| 9 | Can you show on the reason why metrics in testing? | BTL-3 | Applying |
| 10 | Distinguish between milestone and deliverable. | BTL-3 | Applying |
| 11 | What is Walk Through? | BTL-1 | Remembering |
| 12 | Summarize the reasons for selecting the test tool for automation | BTL-5 | Evaluating |
| 13 | Classify the skills needed for automation. | BTL-4 | Analyzing |
| 14 | Can you make the comparison between metrics and measurement? | BTL-5 | Evaluating |
| 15 | What is the need of Automated testing? | BTL-1 | Remembering |
| 16 | Compare product development and automation. | BTL-4 | Analyzing |
| 17 | Give the formula for defects per 100 hours of testing. | BTL-6 | Creating |
| 18 | Name any two software testing tools. | BTL-2 | Understanding |
| 19 | What is the main plan of Test framework? | BTL-4 | Analyzing |
| 20 | Define progress Metrics. | BTL-2 | Understanding |
| 21 | List various productivity metrics in software testing. | BTL-2 | Understanding |
| 22 | Analyze the test measurement process in software testing? | BTL-4 | Analyzing |
| 23 | Evaluate the general goals for the reviewers. | BTL-5 | Evaluating |
| 24 | Design the framework for test automation. | BTL-6 | Creating |

## PART-B

| Q.no | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | Describe briefly about various types of test automation and scope of automation. | 13 | BTL-4 | Analyzing |
| 2 | Discuss in detail about selecting the test tool in test automation. | 13 | BTL-1 | Remembering |
| 3 | Developing software to test the software is called test automation. Test automation can help address several problems, Justify. Draw the Framework for test automation. | 13 | BTL-5 | Evaluating |
| 4 | (a) List the generic requirements for test tool. Explain with suitable examples.<br>(b) Why testing in metrics? Analyze about Productivity metrics. | 06<br>07 | BTL-4 | Analyzing |
| 5 | What are the challenges faced in test automation? Explain. | 13 | BTL-2 | Understanding |
| 6 | (a) Identify what are the key benefits in using metrics in product development and testing?<br>(b) What are the steps involved in a metrics program. Briefly explain each step. | 06<br>07 | BTL-3 | Applying |
| 7 | How do you calculate defect density and defect removal rate? Discuss ways to improve these rates for a better Quality product? | 13 | BTL-6 | Creating |
| 8 | Explain the different types of Test defect metrics under Progress metrics based on what they measure and what area they focus on. | 13 | BTL-4 | Analyzing |
| 9 | Explain the various generations of automation and the required skills for each. | 13 | BTL-2 | Understanding |
| 10 | What are metrics and measurements? Illustrate the types of product metrics. | 13 | BTL-3 | Applying |
| 11 | What is the purpose of progress metrics? Describe in detail. | 13 | BTL-1 | Remembering |
| 12 | Describe about the various components of Test automation. | 13 | BTL-1 | Remembering |
| 13 | Write short notes on following.<br>(a)Classifications of automation testing.<br>(b) Scope of an automation. | 06<br>07 | BTL-2 | Understanding |
| 14 | Outline project, product and productivity metrics with relevant examples | 13 | BTL-3 | Applying |
| 15 | Recall the various generations of automation and the required skills for each with an example. | 13 | BTL-1 | Remembering |
| 16 | Narrate and formulate about the metrics of parameters to be considered for evaluating the software quality. | 13 | BTL-2 | Understanding |
| 17 | How metrics are classified? Demonstrate the project metrics. | | BTL-5 | Evaluating |

## PART-C

| Q.No | Questions | Mark | BTL | Competence |
|---|---|---|---|---|
| 1 | (a) Explain the design and architecture for automation<br>(b) List and discuss the metrics that can be used for defect prevention and how? | 08<br>07 | BTL-5 | Evaluating |
| 2 | (a) List the requirements for test tool. Explain any five requirements with a suitable example.<br>(b) Explain the components of review plans. | 08<br>07 | BTL-5 | Evaluating |
| 3 | Assume you are working in an on-line fast food restaurant system. The system reads customer orders. Relays orders to the kitchen, calculates the customer's bill and give change. It also maintains inventory information. Each wait person has a terminal. Only authorized wait persons and a system administrator can access the system. Describe the tests that are suitable to the test the application. | 15 | BTL-6 | Creating |
| 4 | (a) Explain the five stop test criteria that are based on quantitative | 07 | BTL-5 | Evaluating |

| | | | | |
|---|---|---|---|---|
| | approach.<br>(b) Narrate about the metrics/parameters to be considered for evaluating the software quality. | 08 | | |
| 5 | Compose the different types of test defect metrics under progress metrics based on what they measure and what area they focus on. | 15 | BTL-6 | Creating |