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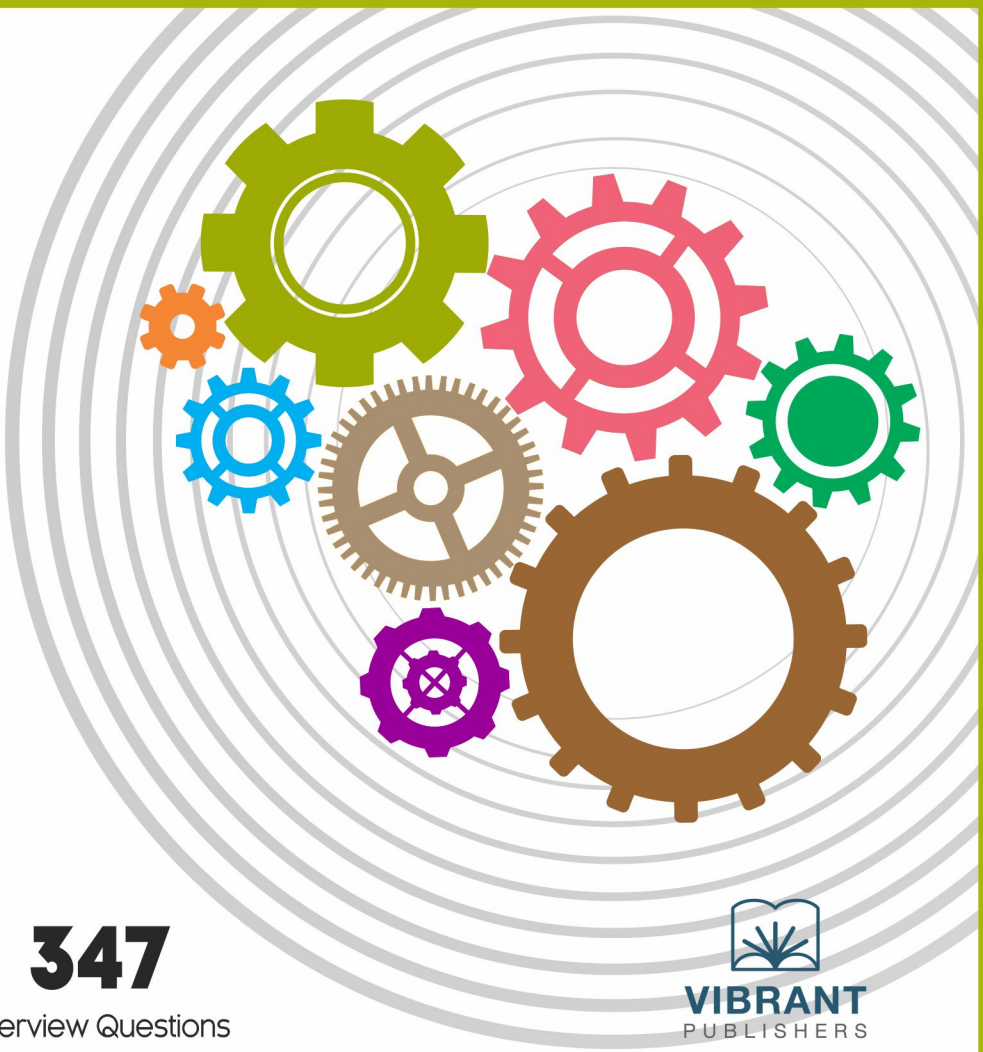
AUTOMATED SOFTWARE TESTING

INTERVIEW QUESTIONS YOU'LL MOST LIKELY BE ASKED



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Dear Reader,

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Automated **Software Testing** Interview Questions

Review these typical interview questions and think about how you would answer them. Read the answers listed; you will find best possible answers along with strategies and suggestions.

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Chapter **1**

Introduction and ATLM

1: What are the types of software testing that can be automated?

Answer:

The types of software testing that can be automated are as follows:

a) **User Interface Testing:** This is performed to make sure if the product meets the specifications of graphical user interface

b) **Functional Testing:** This is performed to make sure if the product performs all the functions

c) **Server Performance Testing:** This is to make sure if the product running in a server is able to withstand the load when many users (Example: 100 users) are accessing the product at the same time

d) **Unit Testing:** This is performed to make sure if a particular module in a product works as expected

e) **Integration Testing:** This is performed to make sure if the product as a whole works as expected

f) **Security Testing:** This is performed to make sure no one can hack the product credentials

g) **Memory leak Testing:** This is to make sure the product can withstand maximum load during peak days (Ex: Christmas)

h) **System Testing:** This is to make sure the system never fails for all the above test scenarios

2: Explain about Automated Testing.

Answer:

Automated testing is the process of testing a software product (for example) by following organization standards without manual verification but using appropriate tool and perform the following tests –

a) User Interface test,

b) Functional test,

c) Server performance test,

d) Unit Test,

e) Integration Test,

f) System Test,

g) Security Test,

h) Memory leak test

3: What are the benefits of Automated Software Testing?

Answer:

The benefits of Automated Software Testing are as follows:

a) Reduce test effort and minimize schedule
b) Produce a reliable system or product which never fails irrespective of any number of users accessing the system
c) Improve the quality of the test effort

4: What are the issues an organization faces while adopting automated software testing?

Answer:

An organization faces the following issues while adopting automated software testing:

a) Finding and hiring testing experts
b) Using correct tool for a task
c) Developing and implemented automated testing process (This includes developing automated test design and development standards)
d) Analyze applications and choosing the best suited one for automation
e) Training the ream on automated testing process and execution
f) Initial increase in schedule and cost

5: What is Automated Test Life cycle Methodology (ATLM)?

Answer:

The ALTM or Automated Test Life cycle Methodology involves designing, developing, execution and reporting the testing methodology to be followed for a project from the very initial stages of the project. The test engineers are included in the requirement analysis process onwards through design,

development and deployment plans. This provides them ample information on the client's requirements and the overall idea of how the software will perform. The testing team prepares a detailed test design and plan that includes the testing tools to be used, test cases to include, text execution and management plans. The test data, environment and documentation are done in detail to be included in the problem reports. The process ends with the review and assessment.

6: What are the components of ATLM?

Answer:

Automated Test Life cycle Methodology consists of 6 processes or components. They are:

a) **Decision to Automate testing:** This depicts the reason for choosing automated testing

b) **Test Tool Acquisition:** This process will list the tools to be used

c) **Automated Testing Introduction Process:** In this process, the team knows the procedure to execute automated testing in a project

d) **Test planning, Design, and Development:** In this process, the team prepares the plan, design, and development of automated testing

e) **Execution and Management of Tests:** In this process, the team executes the automated testing

f) **Test program review and Assessment:** Review and assessment of test results happens in this process

7: What are the common test program mistakes that might arise

while following a structured approach?

Answer:

The structured approach might lead to the following common test program mistakes:

a) Implementing an automated test tool without a testing process results in a non-repeatable and non-measurable test program

b) Implementing a test design without following a design standard results in the creation of test scripts that are not reusable

c) The tools do not support automation of all tests on attempting to automate 100% of test requirements

d) Possibility of using wrong tool

e) Not allowing enough time for test tool set up

f) Involving test resources too late in the development life cycle

8: Explain about 'Decision to Automate' process.

Answer:

'Decision to Automate' process is the first process that represents the First Phase in Automated Test Lifecycle Methodology. This process helps the test team manage automated testing expectations and outlines the benefits of correct implementation. This process mainly helps in developing a test tool proposal which helps in acquiring the management support.

9: Explain about 'Test Tool Acquisition' process.

Answer:

'Test Tool Acquisition' process represents the Second Phase in Automated Test Lifecycle Methodology. This process guides the test team through test tool evaluation and selection process with the confirmation of management support. This process helps to review the different types of tools available to perform different types of tests for a particular project. It also guides the engineer through the process of evaluation domain to pilot the test tool.

10: Explain about 'Automated Testing Introduction' process.

Answer:

'Automated Testing Introduction' represents the Third Phase in Automated Test Lifecycle methodology. This process outlines the steps that are to be performed in automated testing for a new project successfully. It also provides clarity on the standards and guidelines to be followed and the roles of team members who gets involved in performing automated testing.

11: What are the steps involved in 'Automated Testing Introduction' process?

Answer:

There are two steps involved in 'Automated Testing Introduction' process. They are:

a) **Test Process Analysis:** This step ensures successful introduction of the automated test

b) **Test Tool Consideration:** This step ensures if the introduction of test tool is beneficial to the project or not

12: Explain about 'Test Process Analysis' step.

Answer:

'Test Process Analysis' is one of the steps in 'Automated Testing Introduction' process. This step ensures if test strategy and process are kept ready to allow successful introduction of automated test. In this step, the testing professional collects the test process metrics for process improvement. In this phase, the test objectives, goals, and strategies are defined and test processes are documented and communicated to the test team. The skill of the test resources are analyzed against test requirements and planned test activities.

13: Explain about 'Test Tool Consideration' step.

Answer:

'Test Tool Consideration' is one of the steps in 'Automated Testing Introduction' process.

In this step, the test resource investigates whether the test tool will be beneficial to the project to reduce test effort. To determine this, he should know about the testing requirements, test environment, skill of the resources, platform and user environment, and product features of the application which needs to be tested.

In this step, the project schedule is reviewed to ensure that sufficient time exists for the test tool set up and ensure test utilities are mapped to testing requirements.

Also, the test tool compatibility with the application and environment is verified and work around solutions is investigated for incompatibility problems that arise during compatibility tests.

14: Explain about 'Test Planning, Design, and Development' process.

Answer:

'Test Planning, Design, and Development' process represents the Fourth Phase in Automated Test Lifecycle Methodology. It is a three step process that involves planning, design and development.

In Test Planning, the team identifies the test procedure creation standards, guidelines, software, hardware, and network for test environment, schedule, performance measurement requirements, and procedure to control environment configuration, defect tracking procedure, and tracking tool.

In Design, the team addresses the need to define the number of tests to be performed, the way the tests will be approached, and the test conditions that needs to be followed. The test design standards will be created and followed.

In Development, the standards will be defined and followed to make use of automated tests to be reusable, maintainable, and repeatable.

15: Explain about 'Execution and management of Tests' process.

Answer:

'Execution and management of Tests' process represents the Fifth Phase in Automated Test Lifecycle Methodology. In this process, the team executes the test scripts and refines the integration test scripts based on the execution schedule. The team should also conduct evaluation activities of test execution outcomes to avoid false negatives and false positives. Also, the team should perform regression tests and track problems to closure.

16: Explain about 'Test program review and Assessment' process.

Answer:

'Test program review and Assessment' process represents the Sixth Phase in Automated Test Lifecycle Methodology. This process has to be conducted continuously throughout the testing life cycle for continuous improvement. Throughout the testing life cycle, the metrics will be evaluated and final review and assessment activities will be conducted for process improvement.

17: What are the system development life cycle processes that are related to ATLM?

Answer:

There are six system development life cycle processes that are related to Automated Test Lifecycle Methodology. They are:

a) **Process evaluation and improvement:** This determines if the test process is a valid approach towards improving test life cycle

b) **Business analysis and requirements phase:** In this phase, the team performs the test tool acquisition activities

c) **Small Tool pilot/Prototype:** In this phase, the team develops small proto types and conducts lessons learned activities

d) **System Design and Development Phase:** Test planning and development activities happens in parallel with system design and development phase

e) **Integration and Test Phase:** In this phase, system testing and other testing activities are conducted

f) **Production and Maintenance Phase:** In this phase, assessment activities are finalized

18: What is TMM?

Answer:

TMM refers to Test Maturity Model developed by Illinois Institute of Technology. It contains a set of maturity levels through which organizations can progress towards greater test process maturity. This model lists a set of recommended practices and promotes greater professionalism in software testing similar to Software Capability Maturity Model (CMM).

19: What is the correlation between CMM and TMM?

Answer:

Test Maturity Model (TMM) is developed as a complement to Capability Maturity Model (CMM). Organizations interested in assessing and improving their testing capabilities would always involve in software process improvement. The testing process is a subset of software development process and so its maturity growth needs support from KPAs (Key Process Areas) associated with general process growth. For this reason, an organization that wishes to improve its testing process should first improve its software development process by applying CMM guidelines.

20: Explain how TMM adapts to Automated Software Testing.

Answer:

Test Maturity Model (TMM) adapts well to Automated Software Testing because an effective software verification and validation program grow within the development programs that are well planned, executed, monitored, and managed. Similar to software capability maturity model which contains 5 levels of maturity, Test Maturity Model also contains 5 levels of maturity. Automated software testing varies for each level of Test Maturity Model.

21: Explain about Test Automation Development.

Answer:

The test engineer should know about the use of variables, how to pass parameters to a function, conditional branching, arrays, loops, and shared function libraries for developing test automation. The test development activity involves programming responsibilities similar to software development activities. The test developer uses test tools to generate code while developing test scripts that generate a user interface. So, much like software developer, test engineer builds test script modules that are robust, repeatable, and maintainable. This process is known as Test Automation Development.

22: Explain testing effort on using automated test tools.

Answer:

Performing automated testing using test tools requires considerable amount of time as it involves, planning, design, development and testing. So, performing an automated testing does not mean that we just need to test the product functionality which could be completed in a day or two, but it requires initial base work and it requires considerable amount of time based on the project specification.

23: How will you relate TMM Level 3 with Automated Software Testing Level 3?

Answer:

In Test Maturity Model level 3, test objectives are established based on the requirements of user and client needs. In this level, no formal review program is established. Also, the test

measurement is not established to qualify process and product attributes.

In Automated Software Testing Level 3, which is referred to as 'Intentional Automation'; the Automated Testing becomes well defined and well managed. The Automated tests become more reusable and maintainable.

24: How will you relate TMM Level 4 with Automated Software Testing Level 4?

Answer:

In Test Maturity Model Level 4, testing is a measured and quantified process. Software products are tested for quality attributes such as reliability, usability, and maintainability. Defects are logged and each defect is given a priority level.

In Automated Software Testing Level 4, which is referred to as 'Advanced Automation'; the defects are captured and recorded. The tools used in this level are defect and change tracking tools, test procedure generation tools, and code review tools.

25: How will you relate TMM Level 5 with Automated Software Testing Level 5?

Answer:

In Test Maturity Model Level 5, test optimization, defect prevention, and quality control activities are performed. In this level, an established procedure exists for the selection and evaluation of testing tools.

In Automated Software Testing Level 5, the automated software testing attains the highest maturity where the automation tools are used effectively. In this level, test data generation tools, metrics

collection tools, and statistics tools for defect analysis and defect prevention are used.

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Automated Software Testing Interview Questions You'll Most Likely Be Asked is a perfect companion to stand ahead above the rest in today's competitive job market. Rather than going through comprehensive, textbook-sized reference guides, this book includes only the information required immediately for job search to build an IT career. This book puts the interviewee in the driver's seat and helps them steer their way to impress the interviewer.

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