IT8076 SOFTWARE TESTING

IMPORTANT QUESTIONS AND QUESTION BANK

UNIT I - INTRODUCTION

2-Marks

1. List out the levels of the testing maturity model?
2. What are the sources of defects?
3. Mention the objective of software testing?
4. Differentiate verification and validation?
5. How would you classify the types in defect classes?
6. Tell about test, test Oracle and Test Bed?
7. List the element of the engineering disciplines?
8. What is meant by feature defects?
9. Why test cases should be developed for both valid and invalid inputs?
10. Mention the role of test engineer in software development organization?

Part-B

1. Elaborate on the principles of software testing?
2. Describe about the components of software development process? List and discuss the technological developments that are causing organizations to revise their approach to testing?
3. Write short notes on the list given below (a) Cost of defect? (b) Elements of Engineering disciplines?
4. Discuss in detail about the testing axioms? Explain defect classification in detail?
5. Write short notes on Origins of defects? Explain the various origins of defects. Explain the major classes of defects in the software artifacts?
6. Short notes on a) Precision and accuracy b) Verification and validation?
7. Explain in detail about defect repository? Analyze the Role of process in Software quality?
8. Why it is important to meticulously inspect test result and discover the drawbacks incase if you fail to inspect? Illustrate with example?
9. Give an Overview of the Testing Maturity Model (TMM) & the test related activities that should be done for V-model architecture?
10. Describe the various software testing activities? Define correctness, reliability, integrity, interoperability. Discuss how these are related to testing?
11. Why it is necessary to develop test cases for both valid and invalid input condition?
12. Write the major needs of testing and model of testing in details?
13. Explain in detail how developer / tester support to develop a defect repository?

14. Discuss the tester role in software development organization?
15. 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 defects?
16. Give the internal structure of TMM and explain about its maturity goals at each level?

UNIT II - TEST CASE DESIGN STRATEGIES

2-Marks

1. List the advantages of Equivalence class partitioning?
2. Show the need of code functional testing in test case design?
3. Create the equivalence classes in testing the program for quadratic equation solution?
4. Write the two basic testing strategies used to design test cases?
5. Define COTS components?
6. List some of the advantages of documentation testing and domain testing?
7. Compare black box and white box testing?
8. Tell the steps involved in developing test cases with a cause- and-effect graph?
9. Tabulate the black box methods and knowledge sources?
10. Can you classify the compatibility testing and explain?

Part -B

1. Explain about the following methods of black box testing with example of Equivalence class partitioning? And boundary value analysis?
2. Write a note on the following a). Positive and Negative Testing b). Disicion table?
3. Write short notes on the list given below a. Compatibility testing b. Documentation testing
4. With suitable example describe how cause-and–effect graphing and state transition testing is done?
5. What approach would you use for testing strategies? Explain in detail. Show how black box testing is performed in COTS components?
6. Describe the following (a) State based testing (b) Domain testing
7. What inference can you make from random testing, requirement based testing and domain testing explains?
8. Explain the various white box techniques with suitable test cases?
9. Summarize the role of Oaths in white box testing and explain any two white box testing design?

10. Explain the various axioms that allow testers to evaluate Test Adequacy Criteria?
11. Outline the steps in constructing a control flow graph and computing Cyclomatic complexity with an example?
12. 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. Discuss in detail about static testing and structural testing Also write the difference between these testing concepts?
14. Demonstrate the various black box test cases using Equivalence class partitioning and boundary values analysis to test a module for payroll System?
15. Demonstrate the various black box test cases using Equivalence class partitioning and boundary values analysis to test a module for ATM system?

UNIT III - LEVELS OF TESTING

2-Marks

1. What is security testing give the examples?
2. Show the approaches you use to do website testing?
3. Can you judge on the reason for system testing?
4. List out the objectives of configuration testing?
5. Analyze on when to do the regression testing and smoke testing?
6. Compare functional Testing from non-functional Testing?
7. Show the test cases applied for acceptance testing?
8. How could you classify the methodology for performance testing?
9. Can you prepare the role of test data generators in testing object oriented system?
10. Define test harness and Why is it important to design test harness for testing?

Part-B

1. Explain the different integration testing strategies for procedures and functions with suitable diagrams?
2. How would you identify the hardware and software for configuration testing and Explain what testing techniques applied for website testing?
3. State unit test and describe about planning and designing of unit test?
4. Explain the various units in a program considered for unit testing?

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?
6. Summarize the issues that arise in class testing and explain about compatibility and documentation testing?
7. Determine and prepare the test cases for acceptance usability and accessibility testing?
8. How would you classify integration testing and system testing?
9. Describe in detail about scenario testing and performance testing?
10. 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? Tabulate the key difference in integrating procedural oriented system as compared to object oriented systems?
11. Describe "The Class as a Testable Unit" in detail? Explain the planning, design and execution of unit tests?
12. Explain about the various types of System Testing and its importance with example? What is regression testing? Outline the issues to be addressed for developing test cases to perform regression testing?
13. 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? State the need for integration testing in procedural code?
14. Describe the top-down and bottom-up approaches in integration testing discuss about the merits and limitation of these approaches? 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?
15. Case Study: Server kinds of tests for a web application.

Abstract:

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.

Description;

his client is from Hertfordshirt 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.

The client only gave us the software requirement specification and 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 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. Then, how to improve the efficiency of regression test?

UNIT IV - TEST MANAGEMENT

2-Marks

1. Mention the duties of component-wise testing teams?
2. Analyze the various steps in forming the test group?
3. Analyze on few typical resources that are considered when test planning?
4. Give the need of test plan components?
5. Point out the five stages in a test plan process?
6. What is the function of Test Transmittal report or Locating Test Items?
7. Can you make a distinction between structures of single- product companies and multi-product?
8. Can you judge the three essential elements of test infrastructure management?
9. Summarize the success factors for testing organization?
10. How would you estimate the measurements for monitoring error, faults and failures?

Part-B

1. Compare and contrast the role of debugging goals and policies in testing?
2. What factors would an organization take into account to decide the fitness of a product for release?
3. Can the Defect Repository be accessible by customers? If so, What security aspects would you have to take into account?
4. Differentiate between the effect of globalization and geographically distributed teams in product testing?
5. Illustrate various components of test plan with example?
6. What are the role of groups in policy development and test reporting?
7. 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?
8. 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? Why is it so important to integrate testing activities into the software life cycle?
9. Explain in detail about Testing goals and Policy? Explain the role of the Three critical groups Test Planning?
10. Demonstrate on various stages of test plan? Illustrate the role of testing?
11. Explain the following test related documents and its component? (a)Test Case Specification (b)Test Incident Report?
12. 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?
13. Describe the concept of a building a test group?
14. How would you estimate the measurements for monitoring error, faults and failures?
15. How would you prepare testing and development function?

UNIT V - TEST AUTOMATION

2-Marks

1. Express the framework for test automation?
2. Classify the types of test defect metrics?
3. Mention the challenges in automation?
4. What are the goals of Reviewers?
5. Outline the need for test metrics &Give any two metrics?
6. Distinguish between milestone and deliverable?
7. Summarize the reasons for selecting the test tool for automation?
8. Classify the skills needed for automation?
9. Can you make the comparison between metrics and measurement?
10. Compare product development and automation?

Part-B

1. Discuss in detail about selecting the test tool in test automation?
2. Developing software to test the software is called test automation. Test automation can help address several problems, Justify. Draw the Framework for test automation?
3. List the generic requirements for test tool. Explain with suitable examples? Why testing in metrics? Analyze about Productivity metrics?
4. What are the challenges faced in test automation? Explain?
5. Identify what are the key benefits in using metrics in product development and testing? What are the steps involved in a metrics program Briefly explain each step?
6. How do you calculate defect density and defect removal rate? Discuss ways to improve these rates for a better Quality product?
7. Explain the different types of Test defect metrics under Progress metrics based on what they measure and what area they focus on?
8. Explain the various generations of automation and the required skills for each?
9. What are metrics and measurements? Illustrate the types of product metrics?
10. What is the purpose of progress metrics? Describe in detail?
11. Describe about the various components of Test automation?
12. Outline project, product and productivity metrics with relevant examples?
13. 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?

14. Explain the five stop test criteria that are based on quantitative approach?
15. Narrate about the metrics/parameters to be considered for evaluating the software quality?