Software Testing Question Paper Paper Set

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10CS842

Eighth Semester B.E. Degree Examination, Dec.2016/Jan.2017
Software Testing

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. Explain life cycle model of software testing. **(06 Marks)**
b. Explain the IEEE error and fault taxonomy. **(08 Marks)**
c. With neat diagram, explain the currency converter system. **(06 Marks)**

2 a. Explain : i) boundary value testing ii) random testing iii) decision table based testing. **(10 Marks)**
b. What is a test case? Explain the equivalence class test cases for the triangle problem. **(10 Marks)**

3 a. Discuss test coverage metrics and basis path testing with example. **(10 Marks)**
b. With suitable example, explain use testing and slice based testing. **(10 Marks)**

4 a. What is water fall spin-off? Explain life cycle based model with build sequence. **(10 Marks)**
b. Briefly explain about :
i) Top-down integration
ii) Bottom-up integration
iii) Call graph–based integration. **(10 Marks)**

PART – B

5 a. Justify strongly the significance of thread based system testing with SATM as example. **(10 Marks)**
b. Distinguish between progression and regression testing. **(04 Marks)**
c. Explain interaction testing with client/server as a classical example. **(06 Marks)**

6 a. What are the work products generated by verification and validation process? Explain with suitable diagram. **(10 Marks)**
b. Explain the importance of dependability properties in process frame work with neat sketch. **(10 Marks)**

7 a. Explain below terminology in association with fault based testing :
i) original program ii) program location iii) alternative expression iv) distinct behavior of an alternate program. **(10 Marks)**
b. Explain the significance of capture and replay mechanism in software automation testing. **(10 Marks)**

8 Write short notes on the following :
a. System testing
b. Test case template
c. Clean room process model by IBM
d. Software reliability approach by AT & T. **(20 Marks)**

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Eighth Semester B.E. Degree Examination, June/July 2016
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PART – A

1 a. With a neat diagram of a testing life cycle explain following :
i) Fault ii) Failure iii) Incident iv) Test case **(10 Marks)**

b. With a neat sketch, explain the features of 'The SATM' system. **(10 Marks)**

2 a. Explain the following :
i) Robustness testing ii) Worst – case testing. **(08 Marks)**

b. Describe the equivalence class test cases for 'The triangle problem'. **(12 Marks)**

3 a. Define the program graph. Write a structured triangle program and the program graph. **(10 Marks)**

b. For the program graph G(P) and a set of program variable, define the terms 'Defining node of a variable', 'Definition use path with respect to a variable 'All-Defs criterion', 'All C-uses/some p-used and 'All du-paths criterion'. **(10 Marks)**

4 a. Briefly explain the specification – based life – cycle models in levels of testing. **(10 Marks)**

b. What is decomposition based integration? Define the different types of decomposition based integration. **(10 Marks)**

PART – B

5 a. Briefly explain the basic concepts for requirements specification in system testing. **(10 Marks)**

b. Write a short note on: 'taxonomy of interactions' and 'Client/ Server testing'. **(10 Marks)**

6 a. List and explain any four principles that characterize various approaches and techniques for analysis and testing. **(10 Marks)**

b. Explain how does the goals of quality process improvement can be accomplished for analysis and testing of a software. **(10 Marks)**

7 a. What is fault – based testing? Define the terminologies 'Program location' and 'Alternate expression'. **(06 Marks)**

b. Define scaffolding? Mention the purposes of scaffolding. **(04 Marks)**

c. What is a test oracle? With a neat diagram explain the comparison based test oracle. **(10 Marks)**

8 a. Discuss the risks generic to process management and risks specific to quality management with a suitable example. **(10 Marks)**

b. Discuss the basic elements of analysis and test plan. **(10 Marks)**

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Eighth Semester B.E. Degree Examination, Dec.2015/Jan.2016
Software Testing

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. What are the two fundamental approaches used to identify test cases? Explain each of them. **(06 Marks)**

b. Discuss the traditional and structural implementation of triangle problem. **(08 Marks)**

c. What is random testing? Write the test cases for the next date function. **(06 Marks)**

2 a. Write the equivalence class test case for the commission problem. **(06 Marks)**

b. Enlist the guidelines and observations of equivalence class testing. **(07 Marks)**

c. Construct the decision tree for next date function for third try and write the test cases for the same. **(07 Marks)**

3 a. Discuss the DD – path for trainable program and write a table for the types of DD – paths with graph. **(06 Marks)**

b. Explain McCabe's basis path method with an illustrative example. **(08 Marks)**

c. With a suitable example, discuss slice – based testing. **(06 Marks)**

4 a. With regard to levels of testing, describe the decomposition tree for the SATM system. **(06 Marks)**

b. What is call – graph – based integration? Explain the two approaches employed in this strategy explicitly indicating the pros and cons of each. **(06 Marks)**

c. With an illustrative example like SATM system discuss the accomplishment of path – based integration. **(08 Marks)**

PART – B

5 a. Explain the basic concepts for requirements specification that support the tester's process of thread identification. **(07 Marks)**

b. Describe the following approaches used in functional strategies for thread testing :
   i) Event – based thread testing
   ii) Part – based thread testing
   iii) Data – based thread testing. **(07 Marks)**

c. Discuss how the interaction testing is accomplished in client/server systems. **(06 Marks)**

6 a. With an aid of a neat functional schematic, explain the different verification trade–off dimensions (degrees of freedom). **(06 Marks)**

b. Discuss in brief, the six principles that characterize various approaches and techniques for analyzing and testing software projects. **(06 Marks)**

c. Enlist the dependability properties of a software product and further illustrate the relation among these dependability properties, with a suitable diagram. **(08 Marks)**

7 a. With an example program, explain the steps to be followed in mutation analysis. **(07 Marks)**

b. Write short notes on the followings :

i) Mutation analysis Vs structural testing

ii) Hardware fault –based testing. **(06 Marks)**

c. Discuss the significance of test oracles that are used as pass/fail criterion to program execution. **(07 Marks)**

8 a. Briefly describe the various factors considered in the selection of test and analysis strategies. **(06 Marks)**

b. What is root cause analysis (RCA)? Explain the significant steps to be considered in RCA. **(08 Marks)**

c. With regard to test design specification documents, indicate the standard organization of an analysis and test plan of a software product. **(06 Marks)**

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PART – A

1 a. With neat diagram, explain the SATM system. **(10 Marks)**

b. Briefly explain about functional testing and structural testing. **(10 Marks)**

2 a. Explain about decision tables, construct decision table of triangle problem, it accepts three integer a, b and c as three sides inputs equilateral, scalene, isocelis or not a triangle and satisfy the following conditions $a < b + c$, $b < a + c$ and $c < a + b$? **(10 Marks)**

b. With example, explain boundary value analysis and mention its limitations. **(04 Marks)**

c. Differentiate between weak robust equivalence class testing and strong robust equivalence class testing. **(06 Marks)**

3 a. Explain about du-path test coverage matrices with data flow diagram. **(05 Marks)**

b. Explain about test coverage matrices. **(10 Marks)**

c. Explain McCabe's basis path method. **(05 Marks)**

4 a. With neat diagram, explain the traditional view of testing levels of waterfall life cycle and rapid prototyping life cycle. **(10 Marks)**

b. Explain TOP – DOWN integration and bottom – up integration with suitable example. **(10 Marks)**

PART – B

5 a. Explain about client /server testing. **(10 Marks)**

b. Explain about functional strategies for thread testing. **(10 Marks)**

6 a. With neat diagram, explain the validation and verification activities check work product against actual user requirements. **(10 Marks)**

b. Explain the following :
   i) Sensitivity
   ii) Redundancy
   iii) Visibility
   iv) Restriction
   v) Partition. **(10 Marks)**

7 a. Describe the test oracles with a neat diagram. **(10 Marks)**

b. Explain the fault based adequacy criteria. **(10 Marks)**

8 Write a note on :

a. Quality goal

b. Test and analysis strategies and plan

c. Risk management

d. Monitoring the process. **(20 Marks)**

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Software Testing

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PART – A

1 a. Define the terms : error, fault, failure, test and test case. **(05 Marks)**
b. Draw a neat flowchart for the traditional triangle program implementation. **(05 Marks)**
c. Define the problem statement of the NextDate function and write its implementation program. **(10 Marks)**

2 a. Explain the following : Boundary Value Analysis, Robustness testing and special value testing. **(06 Marks)**
b. Explain the equivalence class test cases for the commission problem. **(06 Marks)**
c. What are decision tables? Explain the basic decision table terms and write a decision table for the triangle problem. **(08 Marks)**

3 a. Define basis path testing. Explain the McCabe's basis path method with suitable example. **(10 Marks)**
b. Design a program graph and DD – path graph for the commission program. **(10 Marks)**

4 a. Explain the simple Automatic Teller Machine (SATM) system with screens, context diagram and entity/relationship model. **(10 Marks)**
b. Explain Top-down, Bottom-up and sandwich integration, with a suitable example. **(10 Marks)**

PART – B

5 a. Explain the functional strategies for thread testing. **(10 Marks)**
b. Distinguish progression and regression testing methods. **(05 Marks)**
c. Write a note on client/server testing. **(05 Marks)**

6 a. Explain validation and verification activities, with suitable examples. **(05 Marks)**
b. Discuss various dependability properties used in software testing and analysis activities. **(05 Marks)**
c. Explain the following forms :sensitivity, redundancy, partition, visibility and feedback. **(10 Marks)**

7 a. What is meant by fault – based testing? Discuss the assumptions involved in fault – based testing. **(05 Marks)**
b. Explain the concept of self –based as oracles. **(07 Marks)**
c. Define scaffolding. With a suitable example, discuss generic versus specific scaffolding concepts. **(08 Marks)**

8 a. Write short notes on : cleanroom process model and the quality team. **(10 Marks)**
b. Explain the standard organization of an analysis and test plan, in detail. **(10 Marks)**

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