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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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