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Department of Library
 PCCO Institute of Technology
 B.A., 2nd Stage, BANGALORE-5C

06CS842

Eighth Semester B.E. Degree Examination, June 2012
Software Testing

Time: 3 hrs.

Max. Marks:100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Explain with a supporting flow graph the concept of errors, faults and failures in the process of programming and testing. (10 Marks)
- b. Explain the types of metrics used in software testing and their relationships. (10 Marks)
- 2 a. Explain the elements of static testing and distinguish between walkthroughs and inspections. (10 Marks)
- b. Explain how saturation effect is observed during the testing of complex software systems with supporting figure. (10 Marks)
- 3 a. List the techniques for test selection from informal and rigorously specified requirements and with an example explain any one technique from this list. (10 Marks)
- b. Explain the steps in the category-partition method. (10 Marks)
- 4 a. Explain the procedure for generating a decision table from a cause-effect graph. (10 Marks)
- b. Explain fault propagation by giving example. (10 Marks)

PART – B

- 5 a. Explain different elements in control flow, discuss them with regard to testing, adequacy criterion and coverage. (15 Marks)
- b. Write short notes on procedure call testing. (05 Marks)
- 6 a. Define the following by giving necessary examples: i) Use of a variable; ii) Definition of a variable; iii) Direct data dependency; iv) Definition of clear path. (08 Marks)
- b. Define the various data flow testing criteria. (08 Marks)
- c. Write a short note on data flow coverage with complex structures. (04 Marks)
- 7 a. Explain the following:
 - i) Test case
 - ii) Test case specification
 - iii) Test suite
 - iv) Adequacy criteria
 - v) Test obligation. (10 Marks)
- b. With reference to test execution, explain the concept of scaffolding and test oracles. (10 Marks)
- 8 a. Explain integration testing strategies. (08 Marks)
- b. Compare system, acceptance and regression testing. (08 Marks)
- c. Write short notes on clean room process model. (04 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

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Eighth Semester B.E. Degree Examination, December 2012
Software Testing

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Define software quality. Explain the different measures of software quality. (10 Marks)
b. With the help of a test and debug cycle, explain testing and debugging process. (05 Marks)
c. Write a sample test plan and test cases for the sort program. (05 Marks)
- 2 a. Define path. What do you mean by complete, feasible and infeasible path? Give one example for each and explain, with diagram. (10 Marks)
b. What is goal directed testing? What are different goal directed testing techniques available to test the computer software? Explain each of them, in detail. (10 Marks)
- 3 a. Write the steps involved in creating the equivalence classes. (08 Marks)
b. What is category partition method? With diagram explain the different steps in category partition method. (12 Marks)
- 4 a. Which are the basic elements of a cause – effect graph? Explain with diagram. Also write the cause – effect graph for the web based computer sale application. (12 Marks)
b. Discuss predicate testing, with respect to Boolean operator fault, relational operator fault and arithmetic expression fault. (08 Marks)

PART – B

- 5 a. Explain statement testing and branch testing criteria. (08 Marks)
b. Define path adequacy criterion. Explain condition and path testing analysis of structural testing with an infeasibility problem. (08 Marks)
c. Compare structural testing criteria. (04 Marks)
- 6 a. What are definition use pairs? Write an algorithm for finding the GCD of two positive integers, identify definition – use pairs, definition clear path, also write the data dependence and control dependence graph of GCD method. (12 Marks)
b. Describe data flow testing criteria, in detail. (08 Marks)
- 7 a. Define the different testing terms used in the construction of test specifications and test cases. (08 Marks)
b. What is scaffolding? Explain the purpose of scaffolding, in detail. (06 Marks)
c. Discuss the importance of test oracles. (06 Marks)
- 8 a. Discuss the dependability properties. (08 Marks)
b. Describe the different integration testing strategies. (08 Marks)
c. What are the different steps in the process of verifying and validating the usability? Explain. (04 Marks)

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