

Eighth Semester B.E. Degree Examination, December 2011

Software Testing

Time: 3 hrs.

Max. Marks:100

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

PART – A

- 1 a. Define software quality and quality attributes. Explain briefly. (08 Marks)
 b. Define testing and debugging. With a neat diagram, explain a test and debug cycle briefly. (10 Marks)
 c. Define the terms : i) Correctness ; ii) Reliability. (02 Marks)
- 2 a. Define control flow graph (CFG). Draw the CFG for x^y (x to the power y) program and write the algorithm, basic block and complete paths. (12 Marks)
 b. Briefly discuss the defect management system. (08 Marks)
- 3 a. Discuss in detail boundary - value analysis with an example. (08 Marks)
 b. What are the various steps involved in category - partition methods? With the neat diagram explain these steps briefly. (12 Marks)
- 4 a. Describe cause – effect graphing, with an example and also write the procedure used for the generating tests using cause – effect graphing. (08 Marks)
 b. Explain briefly, what are the notations used in cause – effect graphing. (08 Marks)
 c. Explain the three classes of faults for a predicate testing. (04 Marks)

PART – B

- 5 a. Define the following terms :
 i) Statement adequacy criteria ; ii) Statement coverage ; iii) Condition adequacy criteria ;
 iv) Condition coverage ; v) Path adequacy criteria ; vi) Path coverage. (09 Marks)
 b. Define infeasibility problem. Explain with an example. (05 Marks)
 c. Compare the subsumption relation among structural test adequacy criteria. (06 Marks)
- 6 a. List out the DU and DU pair for the following procedure :
 i) public int gcd (int x, int y) {
 ii) int tmp ;
 iii) while (y! = ϕ) {
 iv) tmp = x% y ;
 v) x = y ;
 vi) y = tmp ;
 vii) }
 viii) return x ;
 ix) } (06 Marks)
 b. Draw the CFG and data dependency graph for the Q.6(b) procedure. (08 Marks)
 c. Write a note on DF testing criteria. (06 Marks)
- 7 a. Define the following testing terms in brief as stated by IEEE :
 i) Test case ; ii) Test case specification (04 Marks)
 iii) Test suite ; iv) Test or test execution. (04 Marks)
 b. Define scaffolding and it's purpose with an example. (04 Marks)
 c. Write short notes on :
 i) Adequacy criteria ; ii) Test oracles ; iii) Self checks as oracles. (12 Marks)
- 8 a. Describe the dependability properties in detail. (12 Marks)
 b. Explain in detail any four integration testing strategies. (08 Marks)
