

IV B.Tech I Semester Regular Examinations, November 2005
SOFTWARE TESTING METHODOLOGY
(Information Technology)

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions
All Questions carry equal marks

1. What are the principles of test case design? Explain. [16]
2. (a) Explain about path instrumentation. How does Link Counters are useful in Path Instrumentation method.
(b) Write about implementation of path testing and What are the various applications of path testing. [10+6]
3. (a) How does Data flow Testing is helpful in fulfilling the gaps in path testing?
(b) Explain about data flow graphs. [3+13]
4. What is domain testing? Discuss applications of domain testing? [16]
5. (a) Define structured code. Explain lower path count Arithmetic.
(b) What is the looping probability of a path expression. Write arithmetic rules. Explain with an example. [8+8]
6. What is decision table and how does it is useful in testing. Explain it with help of an example. [16]
7. Write short notes on
 - (a) Transition bugs
 - (b) Dead states
 - (c) State bugs
 - (d) Encoding bugs [4+4+4+4]
8. (a) Write an algorithm for Node Reduction (General).
(b) Illustrate the applications of Node Reduction algorithm. [8+8]

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1. Classify the different kinds of bugs and explain . [16]
2. (a) How a programs control structure can be represented graphically? Explain with the help of required diagrams.
(b) How a flowchart is differed from a control flow graph?
(c) Explain about Multy Entry and Multy Exit Routines& fundamental path selection criteria. [8+3+5]
3. (a) How does Data flow Testing is helpful in fulfilling the gaps in path testing?
(b) Explain about data flow graphs. [3+13]
4. Explain the domain boundary bugs for two dimensional domains? [16]
5. Write the steps involved in Node Reduction Procedure. Illustrate all the steps with help of neat labeled diagrams [16]
6. What is decision table and how does it is useful in testing. Explain it with help of an example. [16]
7. Write short notes on
 - (a) Transition bugs
 - (b) Dead states
 - (c) State bugs
 - (d) Encoding bugs [4+4+4+4]
8. Write a Node Reduction algorithm in terms of Matrix operations. [16]

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1. (a) Give differences between Functional testing and Structural testing .
 (b) Specify on which factors the importance of bugs depends? And give the metric for it.
 (c) Briefly explain various consequences of bugs.
 (d) What are the remedies for test bugs? [4+4+4+4]
2. What are the different kinds of loops? [16]
3. Name and explain Data flow testing Strategies. [16]
4. Explain the domain boundary bugs for two dimensional domains? [16]
5. Write the steps involved in Node Reduction Procedure. Illustrate all the steps with help of neat labeled diagrams [16]
6. (a) Write Boolean Algebra rules. Illustrate the rules with path expressions.
 (b) Use a Karnaugh map to minimize $F = AB'C'D' + A'B'C'D' + ABC'D + A'BCD + ABD + B'CD' + A'D$ [8+8]
7. (a) Mention design guidelines for building finite state machines into your code.
 (b) Write short notes on
 - i. Switches, Flags, unachievable paths.
 - ii. Essential and Inessential finite state behavior [6+5+5]
8. What are graph matrices and their applications. [16]

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1. Define testing and explain the purpose of testing. [16]
2. (a) Explain about control flow graphs.
(b) What are the advantages and disadvantages of Control flow graphs [10+6]
3. (a) How an Anomaly can be detected. Explain different types of data flow anomalies and Data flow anomaly state graphs
(b) Write applications of data flow testing. [13+3]
4. What is domain testing? Discuss applications of domain testing? [16]
5. Write the steps involved in Node Reduction Procedure. Illustrate all the steps with help of neat labeled diagrams [16]
6. (a) Whether the predicates are restricted to Binary Truth value or not? Explain?
(b) Illustrate the applications of Decision Tables? [10+6]
7. (a) Differentiate between good state graphs and bad state graphs.
(b) What are principles of state testing? Explain its advantages and disadvantages. [8+8]
8. (a) Write a Partitioning Algorithm.
(b) Write an algorithm for All Pairs Paths using Matrix Operations? [8+8]
