

Code :R7421506

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IV B.Tech II Semester(R07) Regular Examinations, April 2011
SOFTWARE TESTING METHODOLOGIES
(Computer Science & Systems Engineering)

Time: 3 hours

Max Marks: 80

Answer any FIVE questions
All questions carry equal marks

1. List out various dichotomies and explain them in detail.
2. (a) Mention various applications of path testing and illustrate with examples.
(b) Differentiate control flow graphs and flow charts.
3. (a) How data flow testing is helpful in fulfilling the gaps in path testing?
(b) Write about data flow graphs.
4. Discuss about domain boundary bugs for two-dimensional domains.
5. (a) What is structural code? Explain lower path count arithmetic.
(b) What is the looping probability of a path expression? Give arithmetic rules and explain with an example.
6. (a) What is decision table? How is it useful in testing? Explain it with an example.
(b) What are don't care conditions and impossible terms? Explain.
7. Write short notes on:
 - (a) Transition bugs
 - (b) Dead states
 - (c) State bugs
 - (d) Encoding bugs.
8. (a) How tools are build? Explain it in detail.
(b) What are relations and give their properties?

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1. (a) What are the phases in tester's mental life?
(b) Why testing is not everything? Explain.
2. (a) Explain about control flow graphs.
(b) What are the advantages and disadvantages of control flow graphs?
3. (a) How an anomaly can be detected? Explain various types of data flow anomalies and data flow anomaly state graphs.
(b) Write applications of data flow testing.
4. Define the following.
 - (a) Domains
 - (b) Domain closure
 - (c) Domain dimensionality
 - (d) Bug assumptions for domain testing.
5. Write the steps involved in node reduction procedure. Illustrate all the steps with neat labeled diagrams.
6. (a) Whether the predicates are restricted to binary truth values or not? Explain.
(b) Illustrate the applications of decision tables.
7. Explain state graphs with implementation.
8. Write relative merits and demerits of different graph matrix representation.

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1. (a) Give brief explanation of white box and black box testing, differentiate between them.
(b) What are differences between static data and dynamic data?
2. Describe the following.
 - (a) Predicates
 - (b) Predicate expression
 - (c) Predict coverage
 - (d) Achievable paths.
3. (a) What is transaction? Explain with an example.
(b) How does transaction flow occur? Illustrate with examples.
4. What is domain testing? Discuss applications of domain testing.
5. Give arithmetic table for PUSH/POP and GET/RETURN problems.
6. By means of truth tables, demonstrate the validity of the following with respect to Boolean algebra
 - (a) Associative law.
 - (b) Demorgan's theorems for three variables
 - (c) Distributive law of '+' over '.'
7. (a) Differentiate between good state graphs and bad state graphs.
(b) What are the principles of state testing? Explain its advantages and disadvantages.
8. (a) Write an algorithm for node reduction (general).
(b) Illustrate the applications of node reduction algorithm.

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1. (a) Define testing. Explain the purpose of testing.
(b) What are the goals of software testing? Explain.
2. (a) Discuss about various kinds of predicate blindness.
(b) Write a short note on various issues related to multi-entry and multi-exit routines.
3. Discuss the advantages and disadvantages of path selection in transaction flow.
4. (a) What is the purpose of domain testing? Give its schematic representation.
(b) Discuss the applications of domain testing for interface testing.
5. Explain the reduction procedure with an example.
6. (a) Whether the predicates are restricted to binary truth values or not? Explain.
(b) Illustrate the applications of decision tables.
7. (a) Mention design guidelines for building finite state machine into code.
(b) Write short notes on:
 - i. Switches, flags, unachievable paths
 - ii. Essential and unessential finite state behavior.
8. What are graph metrics? Give their applications.
