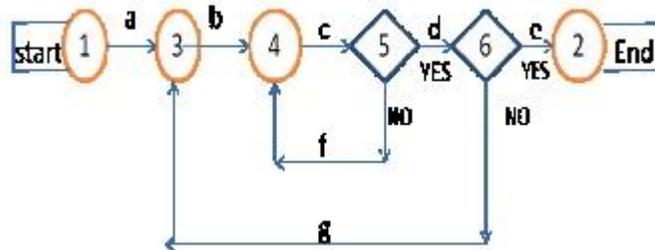


SOFTWARE TESTING METHODOLOGIES

ASSIGNMENT QUESTIONS

UNIT-1

1. Why is it impossible for a tester to find all the bugs in a system? Why might it not be necessary for a program to be completely free of defects before it is delivered to its customers?
2. To what extent can testing be used to validate that the program is fit for its purpose. Discuss?
3. What is meant by integration testing? Goals of Integration Testing?
4. Explain white-box testing and behavioral testing?
5. State and explain various dichotomies in software testing?
6. Discuss about requirements, features and functionality bugs.
7. What are control and sequence bugs? How they can be caught?
8. Consider the following flow - graph? Select optimal number of paths to achieve C1+C2 (statement coverage + branch coverage).



9. Explain various loops with an example?
10. Explain concatenated loops with an example?
11. State and explain various kinds of predicate blindness with examples?
12. What are link counters? Discuss their use in path testing?
13. Discuss Traversal marker with an example. (Link marker).
14. What is meant by Co - incidental Correctness with example
15. What is meant by statement testing and branch testing with an example.
16. State and explain various path selection rules
17. What is meant by program's control flow? How is it useful for path testing?
18. Discuss various flow graph elements with their notations.

UNIT-2

1. Distinguish Control Flow and Transaction flow.
2. What is meant by transaction flow testing. Discuss its significance.
3. Discuss in detail data - flow testing strategies.
4. What are data - flow anomalies? How data flow testing can explore them?
5. What are data-flow anomalies? How data flow testing can explore them?
6. What is meant by a program slice? Discuss about static and dynamic program slicing.
7. Explain the terms Dicing, Data-flow and Debugging.
8. What is meant by data flow model? Discuss various components of it? Compare data flow and path flow testing strategies?
9. Explain data-flow testing with an example. Explain its generalizations and limitations

UNIT-3

1. Discuss with example the equal - span range/Domain compatibility bugs.
2. Discuss in detail about testability of Domains
3. What is meant by Domain Dimensionality.
4. What is meant by nice - domain? Give an example for nice two - dimensional domain
5. Discuss
 - i. Linear domain boundaries
 - ii. Non linear domain boundaries
 - iii. Complete domain boundaries
 - iv. Incomplete domain boundaries
6. Explain various properties related to Ugly-domains.
7. State and Explain various restrictions at domain testing processes.
8. What is meant by domain testing? Discuss the various applications of domain testing?
9. With a neat diagram, explain the schematic representation of domain testing.
10. Explain how one-dimensional domains are tested?
11. Discuss in detail the domains and interface testing.
12. Explain Regular Expressions and Flow Anomaly detection.
13. Example Huang's theorem with examples
14. Reduction procedure algorithm for the following flow graph:
15. Write Short Notes on:
 - i. Distributive Laws
 - ii. Absorption Rule
 - iii. Loops
 - iv. Identity elements
16. Discuss Path Sums and Path Product.
17. Discuss in brief applications of paths

UNIT-4

1. Reduce the following functions using K-Maps

$$F(A,B,C,D) = P(4,5,6,7,8,12,13)+d(1,15)$$

2. Whether the predicates are restricted to binary truth-values or not. Explain.
3. What are decision tables? Illustrate the applications of decision tables. How is a decision table useful in testing. Explain with an example.
4. How can we determine paths in domains in Logic based testing?
5. How the Boolean expression can be used in test case design
6. Flow graphs are abstract representations of programs. Justify?
7. Explain prime implicant, sum of product form and product of sum form.
8. How can we form specifications into sentences? Write down different phrases that can be used for words?
9. Explain about the ambiguities and contradictions in specifications.?
10. Demonstrate by means of truth tables the validity of the following theorems of Boolean algebra:
 - i. Associative Laws
 - ii. Demorgan's theorems for three variables
 - iii. Distributive Law
 - iv. Absorption Rule

UNIT-5

1. The behavior of a finite state machine is invariant under all encodings. Justify?
2. Write testers comments about state graphs
3. What are the types of bugs that can cause state graphs?
4. What are the principles of state testing. Discuss advantages and disadvantages.
5. Write the design guidelines for building finite state machine into code.
6. What are the software implementation issues in state testing?
7. Explain about good state and bad state graphs.
8. Explain with an example how to convert specification into state-graph. Also discuss how contradictions can come out.
9. Write short notes on:
 - i. Transition Bugs
 - ii. Dead States
 - iii. State Bugs
 - iv. Encoding Bugs
10. How can the graph be represented in Matrix form?
11. Write a partition algorithm.
12. Discuss node reduction algorithm.
13. How can a node reduction optimization be done.
14. What are the matrix operations in tool building.
15. Discuss the algorithm for finding set of all paths
16. How can a relation matrix be represented and what are the properties of relations?
17. Explain cross-term reduction and node term reduction optimization.
18. Write about matrix powers and products.
19. Write about equivalence relation and partial ordering relation
20. What are the advantages and disadvantages of array representations?
21. Write about loops in matrix representation
22. What are graph matrices and their applications?
23. Discuss the linked list representation.

UNIT-6

1. Define win runner?
2. Explain uses of win runner?
3. What are different modes of win runner?
4. Explain win runner testing process?
5. How to test a module using win runner?
6. Create a script in win runner in context sensitive mode?
7. What are the steps for synchronizing test in win runner?
8. Generate test cases for library application using win runner?
9. Generate test cases for online shopping?
10. Generate test cases for bank application?
11. Define context sensitive mode?
12. What is test script?
13. What is data driver wizard?
14. How to create test in win runner?
15. How to debug test in win runner?