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**STM UNIT WISE QUESTION BANK**

**UNIT-1**

3. What is meant by integration testing? Goals of Integration Testing? (8 M)

4. Explain white-box testing and behavioural testing? (8 M)

5. State and explain various dichotomies in software testing? (16 M)

6. Discuss about requirements, features and functionality bugs. (10 M)

7. What are control and sequence bugs? How they can be caught? (6 M)

8. Explain various loops with an example? (4 M )

9. Explain concatenated loops with an example? (4 M)

10. State and explain various kinds of predicate blindness with examples? (8 M)

11. What are link counters? Discuss their use in path testing? (8 M)\*

12. Discuss Traversal marker with an example. (Link marker). (8 M)\*

13. What is meant by Co - incidental Correctness with example (8 M)\*

14. What is meant by statement testing and branch testing with an example. \*(8 M)

15. State and explain various path selection rules.(8 M)\*

16. What is meant by program’s control flow? How is it useful for path testing? (8)

17. Discuss various flow graph elements with their notations. (8)

**UNIT-2**

1. Distinguish Control Flow and Transaction flow. (6 M) \*

2. What is meant by transaction flow testing. Discuss its significance. (10 M)\*

3. Discuss in detail data - flow testing strategies. (16 M)\*\*\*

4. What are data - flow anomalies? How data flow testing can explore them? (16 M)

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. (8 M)

7. Explain the terms Dicing, Data-flow and Debugging. (8 M)

8. What is meant by data flow model? Discuss various components of it? (8 M)

9. Compare data flow and path flow testing strategies? (8 M)

10. Explain data-flow testing with an example. Explain its generalizations and limitations.(8 M)

11. Discuss with example the equal - span range/Doman compatibility bugs.(8 M) \*

12. Discuss in detail about testability of Domains.(8 M)\*

13. What is meant by Domain Dimensionality. (8 M)

14. What is meant by nice - domain? Give an example for nice two - dimensional domain.(8 M).\*

15. Discuss a) Linear domain boundaries

b) Non linear domain boundaries

c.) Complete domain boundaries

d). Incomplete domain boundaries

16. Explain various properties related to Ugly-domains. (8 M) \*

21. State and Explain various restrictions at domain testing processes. (10 M)

22. What is meant by domain testing? Discuss the various applications of domain testing?(10 M) \*

23. With a neat diagram, explain the schematic representation of domain testing. (6 M)

24. Explain how one-dimensional domains are tested? (10 M)

25. Discuss in detail the domains and interface testing. (16 M)

**UNIT-3**

1. Explain Regular Expressions and Flow Anomaly detection. (16 M)\*\*

2. Example Huang’s theorem with examples (12 M)\*

3. Reduction procedure algorithm for the following flow graph: (16 M)\*\*

4. Write Short Notes on: (16 M) \*a. Distributive Lawsb. Absorption Rulec. Loopsd. Identity elements5. Discuss Path Sums and Path Product. (8 M)6. Discuss in brief applications of paths (8 M)

7. Reduce the following functions using K-Maps (16 M) \*\*F(A,B,C,D) = P(4,5,6,7,8,12,13)+d(1,15)

8. Whether the predicates are restricted to binary truth-values or not. Explain. (10 M)

9. What are decision tables? Illustrate the applications of decision tables. How is a decision table useful in testing. Explain with an example. (16 M) \*\*

10. How can we determine paths in domains in Logic based testing? (8 M)

11. How the Boolean expression can be used in test case design (8 M)

12. Flow graphs are abstract representations of programs. Justify? (8 M)

13. Explain prime implicant, sum of product form and product of sum form. (8 M)

14. How can we form specifications into sentences? Write down different phrases thatcan be used for words? (8 M)

15. Explain about the ambiguities and contradictions in specifications.? (8 M)

16. Demonstrate by means of truth tables the validity of the following theorems of Boolean algebra: (8 M) \*\*a. Associative Laws

b. Demorgan's theorems for three variables

c. Distributive Law

d. Absorption Rule

**UNIT-4**

1. The behavior of a finite state machine is invariant under all encodings. Justify? (16 M)\*\*

2. Write testers comments about state graphs (8 M)\*\*

3. What are the types of bugs that can cause state graphs? (8 M)\*

4. What are the principles of state testing. Discuss advantages and disadvantages. (8 M)

5. Write the design guidelines for building finite state machine into code. (8 M)

6. What are the software implementation issues in state testing? (8 M)

7. Explain about good state and bad state graphs. (8 M)

8. Explain with an example how to convert specification into state-graph. Also discuss how contradictions can come out. (16 M)

9. Write short notes on: (16 M)

a. Transition Bugs

b. Dead States

c. State Bugs

d. Encoding Bugs

**UNIT-5**

1. How can the graph be represented in Matrix form? (3 M)

2. Write a partition algorithm. (8 M)

3. Discuss node reduction algorithm. (8 M)\*\*

4. How can a node reduction optimization be done. (6 M)

5. What are the matrix operations in tool building. (8 M)\*\*

6. Discuss the algorithm for finding set of all paths (8 M)

7. How can a relation matrix be represented and what are the properties of relations? (8 M)

8. Explain cross-term reduction and node term reduction optimization. (8 M)

9. Write about matrix powers and products. (8 M)

10. Write about equivalence relation and partial ordering relation (8 M)

11. What are the advantages and disadvantages of array representations? (8 M)

12. Write about loops in matrix representation (8 M)

13. What are graph matrices and their applications? (16 M)

14. Discuss the linked list representation. (5 M)