**SIDDHARTH INSTITUTE OF ENGINEERING &TECHNOLOGY ::
PUTTUR**

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Subject with Code : Software Testing Methodologies(23CS0535)   **Course & Branch**: CAD

Year & Sem: III-CSE & II-Sem   **Regulation:** R23

UNIT –I

Introduction, Flow graphs and Path testing

1. State and Explain various Dichotomies in Software Testing	**[L2][CO1]**	[10M]
2. List out the various taxonomy of bugs & explain it.	**[L2][CO1]**	[10M]
3. Explain the concept of path testing with an example.	**[L3][CO1]**	[10M]
4. a. State and explain the consequences of bugs?	**[L2][CO1]**	[05M]
b. Differentiate testing and debugging.	**[L4][CO1]**	[05M]
5. Describe the concept of path sensitization and path instrumentation.	**[L2][CO1]**	[05M]
6. Write short notes on path sensitizing and path instrumentation.	**[L2][CO1]**	[10M]
7. Describe the various testing levels and explain the model of testing.	**[L2][CO1]**	[10M]
8. Write short notes on the following:		
a. Predicate.	**[L1][CO1]**	[2M]
b. Path predicate.	**[L1][CO1]**	[2M]
c. Achievable path.	**[L1][CO1]**	[2M]
d. Path sensitization.	**[L1][CO1]**	[2M]
e. Path instrumentation.	**[L1][CO1]**	[2M]
9. List out the different types of test bugs.	**[L1][CO1]**	[10M]
10. Write the applications of dataflow testing and path testing?	**[L3][CO1]**	[10M]
11. Describe the basics of path testing with an example.	**[L3][CO1]**	[10M]
12. Specify on which factor the importance of bugs depends and gives the metric for it& Explain Phases in a Tester's mental life.	**[L4][CO1]**	[5M]
13. a. What is the purpose of software testing?	**[L1][CO1]**	[2M]
b. What is meant by Dichotomies in software testing?	**[L1][CO1]**	[2M]
c. Define Flow Graph. What are its basic components?	**[L1][CO1]**	[2M]
d. What is Path Testing?	**[L1][CO1]**	[2M]
e. What is a Path Predicate?	**[L1][CO1]**	[2M]

UNIT –II

Transaction Flow Testing, Dataflow testing

1. Discuss about transaction flow testing technique**?**   **[L2][CO2]** [10M]

2. Explain about births and merges in transaction flow testing.   **[L2][CO2]** [5M]

3. Explain the various strategies of data flow testing.   **[L4][CO2]** [10M]

4. How do we find dataflow anomalies explain about suitable example & list out

   the various applications of data flow testing?   **[L4][CO2]** [10M]

5. Explain dataflow anomalies with one example?   **[L3][CO2]** [5M]

6. Discuss the basics of data flow testing & explain the

   various strategies of DFT**.**   **[L4][CO2]** [10M]

7. What are the elements of flow graphs & Explain it.   **[L2][CO2]** [5M]

8. Define flow graph. Write any one application of flow graph?   **[L2][CO2]** [5M]

9. List out various applications of Data flow testing & Transaction flow testing.**[L3][CO2]** [5M]

10. What is transaction? Write about mitosis& mitosis.   **[L2][CO2]** [5M]

11. a) Define Transaction Flow Testing.   **[L1][CO2]** [2M]

    b) What is a Transaction Flow Graph? Mention its components.   **[L1][CO2]** [2M]

    c) Define Data Flow Testing**.**   **[L1][CO2]** [2M]

    d) What is a Definition–Use (DU) pair in Data Flow Testing? [**[L2][CO2]** [2M]

    e) List and define the main strategies in Data Flow Testing   **[L3][CO2]** [2M]

UNIT-III

Domain testing

1. Explain in detail about Domain testing strategy. **[L4][CO3]** [5M]

2. Write short notes about Domains and Testability. **[L2][CO3]** [5M]

3. Explain the concept of Domains and Interface testing. **[L3][CO3]** [5M]

4. Write short notes about systematic boundaries. **[L4][CO3]** [10M]

5. Explain about the properties of Nice and ugly domains. **[L4][CO3]** [5M]

6. What is flow anomaly detection, discuss with an example. **[L3][CO3]** [5M]

7. What is a path product and path sums, discuss with an example. **[L3][CO3]** [10M]

8. Explain about encoding bugs in domain testing. **[L4][CO3]** [5M]

9. Explain about interface testing in detail with examples. **[L3][CO3]** [10M]

10. Describe the concept of nice and ugly domains. **[L2][CO3]** [5M]

11. Define nice and ugly domains and how it is used for testing. **[L3][CO3]** [5M]

12. Write short notes on the following:

    a. Domain closure **[L1][CO3]** [2M]

    b. Domains **[L1][CO3]** [2M]

    c. Paths and predicates **[L1][CO3]** [2M]

    d. Domain dimensionality. **[L1][CO3]** [2M]

    e. Nice domain. **[L1][CO3]** [2M]

13. a. Define Domain Testing. **[L1][CO3]** [2M]

    b. What is meant by domains and paths? **[L1][CO3]** [2M]

    c. Differentiate between Nice Domains and Ugly Domains. **[L2][CO3]** [2M]

    d. What is Domain and Interface Testing? **[L1][CO3]** [2M]

    e. What is meant by Domains and Testability**?** **[L1][CO3]** [2M]

UNIT-IV

Paths, Path products and Regular expressions &Logic Based Testing

1. Explain the concept of Paths, Path products and Regular expressions with an example. **[L2][CO4]** [10M]

2. Write short notes on Path Products & Path expressions. **[L2][CO4]** [5M]

3. What is a KV chart? Explain its usage with an example. **[L3][CO4]** [10M]

4. Write down the steps for Reduction procedure and solve it with an example. **[L3][CO4]** [10M]

5. Explain the usage of regular expression in flow anomaly detection. **[L3][CO4]** [5M]

6. Write the steps involved in node reduction procedure. Illustrate all the

    steps with help of neat labeled diagrams**.** **[L3][CO4]** [10M]

7. Describe the concept of Logic Based Testing. **[L2][CO4]** [10M]

8. Explain about regular expression and FAD. **[L2][CO4]** [10M]

9. a. What is a Path Expression? How is it related to path products? **[L2][CO4]** [2M]

    b. What is the Reduction Procedure in path expressions? **[L1][CO4]** [2M]

    c. What is Flow Anomaly Detection? **[L1][CO4]** [2M]

    d. What is a Decision Table in Logic-Based Testing? **[L1][CO4]** [2M]

    e. What are K–Map (Karnaugh Map) Charts? How are they used in testing? **[L2][CO4]** [2M]

UNIT-V

States, State Graphs and Transition Testing, Graph Matrices and Applications

1. Explain about State testing and its principle.   **[L2][CO5]** [10M]

2. Explain about the Advantages and Dis-Advantages of State Testing.   **[L5][CO5]** [5M]

3. Explain about the relations of graph matrix and the properties in it.   **[L4][CO5]** [5M]

4. Explain about State Bugs and Transition Bugs.   **[L2][CO5]** [5M]

5. Describe the concept of Good & Bad State Graphs.   **[L4][CO5]** [5M]

6. a. What is graph matrices and discuss about their applications?   **[L3][CO5]** [5M]

   b. Give features of bad state graph.   **[L4][CO5]** [5M]

7. Write short notes on the following:

   a. State Graphs   **[L1][CO5]**

   b. State table   **[L1][CO5]** [5M]

8. Explain the concept of graph matrices and applications.   **[L3][CO5]** [10M]

9. Write a node reduction Algorithm & Explain with an example.   **[L2][CO5]** [10M]

10. a. What is a State Graph? Mention its basic components.   **[L1][CO5]** [2M]

    b. Differentiate between Good State Graph and Bad State Graph. **[L2][CO5]** [2M]

    c. What is State Testing?   **[L1][CO5]** [2M]

    d. What is a Graph Matrix?   **[L1][CO5]** [2M]

    e. What is the Node Reduction Algorithm in Graph Matrices?   **[L2][CO5]** [2M]