



SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY :: PUTTUR
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QUESTION BANK (DESCRIPTIVE)

Subject with Code : Software Testing(20MC9119)

Course & Branch: MCA

Year & Sem: II & I

Regulation: R20

UNIT –I

INTRODUCTION OF FLOW GRAPH AND PATH TESTING

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|----|---|------------------------|----------------|
| 1 | Define integration testing. List and explain goals of integration testing. | [L1][CO1] | [12M] |
| 2 | Explain white-box testing and behavioral testing. | [L2][CO1] | [12M] |
| 3 | Discuss the following concepts.
i) Model for Testing
ii) Path Predicates
iii) Path Sensitizing | [L2][CO1] | [12M] |
| 4 | State and explain various dichotomies in software testing. | [L1][CO3] | [12M] |
| 5 | Illustrate about requirements, features and functionality bugs. | [L3][CO1] | [12M] |
| 6 | (a) Analyze the control and sequence bugs by explaining how they can be caught.
(b) Explain achievable paths with suitable examples. | [L4][CO2]
[L2][CO2] | [06M]
[06M] |
| 7 | (a) Describe taxonomy of bugs.
(b) Generate the goals for testing and model for testing in software testing. | [L2][CO2]
[L5][CO2] | [06M]
[06M] |
| 8 | Summarize the following.
i) The Consequences of Bugs
ii) Testing and Design Style
iii) The Role of Models
iv) Pesticide Paradox | [L6][CO1] | [12M] |
| 9 | (a) Contrast Interface, Integration and System Bugs.
(b) Describe phases in tester's mental life and state Complexity Barrier. | [L4][CO1]
[L2][CO1] | [06M]
[06M] |
| 10 | Illustrate the application of Path Testing and Link Markers. | [L3][CO2] | [12M] |

UNIT –II

TRANSACTION FLOW TESTING AND DATA FLOW TESTING

1	(a) Define transaction flow graph and explain with an example.	[L1][CO3]	[06M]
	(b) Illustrate all c-uses/some p-uses strategies and discuss all p-uses/some causes strategies.	[L3][CO3]	[06M]
2	(a) Explain births and mergers in a transaction flow testing.	[L2][CO1]	[06M]
	(b) Explain various loops with an example.	[L2][CO1]	[06M]
3	Discuss in detail data - flow testing strategies	[L2][CO3]	[12M]
4	Distinguish Control Flow and Transaction flow testing.	[L4][CO3]	[12M]
5	(a) Write about data-flow anomalies. How data flow testing can explore them.	[L3][CO1]	[06M]
	(b) State in details about the slicing and dicing. Discuss about static and dynamic program slicing.	[L1][CO3]	[06M]
6	Discriminate the terms Dicing, Data-flow and Debugging.	[L6][CO3]	[12M]
7	Explain data-flow testing with an example. Explain its generalizations and limitations.	[L5][CO6]	[12M]
8	Illustrate the Data-Flow Testing Strategies	[L3][CO3]	[12M]
9	Criticize motivation and assumptions of Data Flow Testing.	[L4][CO1]	[12M]
10	Summarize the transaction-flow testing techniques.	[L6][CO6]	[12M]

UNIT-III**DOMAIN TESTING**

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|----|--|-----------|-------|
| 1 | Interpret with example the equal - span range and domain compatibility bugs. | [L6][CO1] | [12M] |
| 2 | Discuss in detail about testability of Domains. | [L2][CO3] | [12M] |
| 3 | Explain in detail domain dimensionality. | [L2][CO3] | [12M] |
| 4 | (a) Write about nice - domain. | [L3][CO2] | [6M] |
| | (b) Give an example for nice two – dimensional domain. | [L3][CO2] | [6M] |
| 5 | Discuss in detail. | [L2][CO3] | [12M] |
| | i) Linear domain boundaries | | |
| | ii) Non-linear domain boundaries | | |
| | iii) Complete domain boundaries | | |
| | iv) Incomplete domain boundaries | | |
| 6 | Examine the various properties related to Ugly-domains. | [L4][CO3] | [12M] |
| 7 | State and explain various restrictions at domain testing processes. | [L1][CO2] | [12M] |
| 8 | (a) Summarize what is meant by domain testing. | [L6][CO5] | [6M] |
| | (b) Discuss the various applications of domain testing. | [L6][CO5] | [6M] |
| 9 | With a neat diagram, explain the schematic representation of domain testing. | [L4][CO4] | [12M] |
| 10 | Explain how one-dimensional domains are tested. | [L5][CO3] | [12M] |

UNIT-IV**PATHS, PATH PRODUCTS AND REGULAR EXPRESSIONS**

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|----|--|-----------|-------|
| 1 | (a) Explain Regular Expressions | [L2][CO1] | [6M] |
| | (b) Define Flow Anomaly detection. | [L2][CO1] | [6M] |
| 2 | Discuss with an example of Huang's theorem. | [L2][CO1] | [12M] |
| 3 | Evaluate the reduction procedure algorithm assuming an example. | [L6][CO2] | [12M] |
| 4 | Write Short Notes on: | [L3][CO3] | [12M] |
| | i) Distributive Laws | | |
| | ii) Absorption Rule | | |
| | iii) Loops | | |
| | iv) Identity elements | | |
| 5 | (a) Analyze about Path Sums | [L4][CO3] | [6M] |
| | (b) Explain Path Product. | [L4][CO3] | [6M] |
| 6 | Illustrate the applications of paths. | [L3][CO6] | [12M] |
| 7 | Justify "Whether the predicates are restricted to binary truth-values or not". | [L6][CO3] | [12M] |
| 8 | (a) State what is mean by decision tables | [L3][CO1] | [12M] |
| | (b) Illustrate the applications of decision tables with an example. | | |
| 9 | Explain how we can determine paths in domains in Logic based testing. | [L2][CO3] | [12M] |
| 10 | Summarize how the boolean expression can be used in test case design. | [L5][CO3] | [12M] |

UNIT-V**STATE, STATE GRAPHS AND TRANSITION TESTING**

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|----|---|-----------|-------|
| 1 | The behavior of a finite state machine is invariant under all encodings. Justify. | [L6][CO5] | [12M] |
| 2 | Write and explain testers' comments about state graphs. | [L5][CO3] | [12M] |
| 3 | Analyze the types of bugs that can cause state graphs. | [L4][CO4] | [12M] |
| 4 | (a) List the principles of state testing. | [L1][CO3] | [6M] |
| | (b) Discuss its advantages and disadvantages of state testing. | [L1][CO3] | [6M] |
| 5 | Generate the design guidelines for building finite state machine into code. | [L5][CO4] | [12M] |
| 6 | Describe the software implementation issues in state testing. | [L2][CO4] | [12M] |
| 7 | Contrast about good state and bad state graphs. | [L4][CO3] | [12M] |
| 8 | Explain with an example how to convert specification into state-graph and how to handle contradictions. | [L2][CO2] | [12M] |
| 9 | Illustrate the following:
i) Transition Bugs Dead States
ii) State Bugs
iii) Encoding Bugs | [L3][CO3] | [12M] |
| 10 | (a) Describe about the graph matrices | [L6][CO6] | [6M] |
| | (b) Explain graph matrices applications. | [L6][CO6] | [6M] |

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