Code: 21F00204a

MCA II Semester Regular & Supplementary Examinations July 2024
SOFTWARE TESTING METHODOLOGIES
(Master of Computer Applications)

Time: 3 hours   Max. Marks: 60

Answer all the questions
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1	(a)	What is software testing? Explain principles of software testing.	6M
	(b)	Explain flow graph notation for the program to find big number in given three numbers.	6M

OR

2	(a)	Discuss about taxonomy of software bugs.	6M
	(b)	Explain basic concepts of path testing.	6M

3	(a)	Discuss about Transform flow.	6M
	(b)	Explain any one application of dataflow testing.	6M

OR

4	(a)	Explain Transaction flow.	6M
	(b)	Discuss about domain testing.	6M

5	(a)	Discuss about reduction procedure with example.	6M
	(b)	Explain logic based testing.	6M

OR

6	(a)	Explain path regular expression with example.	6M
	(b)	Discuss about decision table with example.	6M

7	(a)	Explain role of state graphs in transition testing.	6M
	(b)	Discuss about transition testing.	6M

OR

8	(a)	Explain good and bad state graphs.	6M
	(b)	Explain state testing.	6M

9		Explain matrix of a graph with example.	12M

OR

10		Explain node reduction algorithm.	12M

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Code: 21F00204a

MCA II Semester Supplementary Examinations February 2024
SOFTWARE TESTING METHODOLOGIES
(Master of Computer Applications)

Time: 3 hours   Max. Marks: 60

Answer all the questions

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1	(a)	Discuss about Purpose of testing and model for testing.	6M
	(b)	Draw the control flow graph for the program to calculate GCD of two numbers.	6M

OR

2	(a)	Explain path selection and path testing criteria. How they affect testing?	6M
	(b)	Explain in detail about path sensitization and application of path testing.	6M

3	(a)	Describe implementation of transaction flow testing with an example.	6M
	(b)	What are the differences between static and dynamic anomaly detection? Explain	6M

OR

4	(a)	Discuss about testing 1-D and 2-D domains with examples.	6M
	(b)	Explain the terms slicing, dicing, data flow and debugging with reference to testing.	6M

5	(a)	Give an example of mean processing time of a routine and approximate minimum number of paths.	6M
	(b)	Explain in detail about BNF notation with examples.	6M

OR

6	(a)	How decision tables will be helpful in logic based testing gives various components of it? Explain.	6M
	(b)	What is KV-Chart? Draw KV-chart for 4 variables.	6M

7	(a)	Discuss the limitations and extensions of state graph with respect to state testing.	6M
	(b)	Explain software implementation of state graphs.	6M

OR

8	(a)	What are some situations in which state testing may prove useful? Explain.	6M
	(b)	Write the guidelines to design state machines.	6M

9	(a)	What are the matrix operations used in tool building? Give their significance.	6M
	(b)	Elaborate node reduction algorithm with an example.	6M

OR

10	(a)	How to formulate and execute test scripts in load runner? Explain.	6M
	(b)	Explain the different windows that are available in WinRunner and their usage in testing applications	6M

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Code: 9F00502

MCA V Semester Supplementary Examinations May 2019
SOFTWARE TESTING
(For 2009, 2010, 2011, 2012 (LC), 2013, 2014, 2015 & 2016 admitted batches only)

Time: 3 hours   Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks
*****

1   (a) Differentiate between testing and debugging.
    (b) Discuss in detail about various categories of bugs.

2   (a) What are the different criteria or strategies for path testing? Explain briefly.
    (b) What is path instrumentation? Briefly explain the various types of path instrumentation methods.

3   (a) What are the different types of transaction flow junction points? Explain each in brief.
    (b) Briefly explain about the various types of data flow testing strategies in decreasing order of their effectiveness.

4   (a) List out the different bugs that result in domain errors and also brief them.
    (b) Briefly explain about domain and interface testing.

5   (a) Briefly discuss about the path products and the path sums with suitable examples.
    (b) Explain briefly about the generic flow-anomaly detection problem.

6   (a) What are the different areas of decision tables? Define them and also give an example.
    (b) Explain about Karnaugh-Veitch chart for Boolean functions of two and three variables.

7   (a) Define state graphs. Give an example. Also discuss how it is transformed into the form of state tables.
    (b) Differentiate equivalent states, unreachable states and dead states in a state graph with suitable examples.

8   (a) Define cyclomatic complexity. How it is calculated for a graph? Give an example.
    (b) Explain in detail about the node reduction algorithm for a graph.

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Code: 9F00502

MCA V Semester Supplementary Examinations May 2018
SOFTWARE TESTING
(For students admitted in 2011(LC), 2012, 2013, 2014 & 2015)

Time: 3 hours   Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) To what extent can testing be used to validate that the program is fit for its purpose. Discuss.
   (b) State and explain various kinds of predicate blindness with examples.

2   What is meant by a loop? State and explain different kinds of loops with suitable examples.

3 (a) Explain in detail about the data flow model.
   (b) What is transaction flow testing? Explain.

4 (a) Discuss in detail about testability of domains.
   (b) Where does domain come from? Explain nice domains.

5   What is the looping probability of a path expression? List out arithmetic rules and explain with examples.

6 (a) Elaborate with an example, how to convert a specification into a state graph.
   (b) Explain the rules of Boolean algebra.

7 (a) What are the principles of state testing? Explain its advantages and disadvantages.
   (b) Write about testability tips.

8 (a) What operations does a toolkit consist for the representation of graph?
   (b) Discuss the relative merits and demerits of different graph matrix representations.

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Code: 9F00502

MCA V Semester Regular & Supplementary Examinations October/November 2017
SOFTWARE TESTING
(For 2012, 2013, 2014 & 2015 admitted batches only)

Time: 3 hours

Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks
*****

1　(a)　What are bugs? List out the consequence of bugs.
　　(b)　Differentiate between debugging and testing.

2　(a)　Write about control flow blocks.
　　(b)　Discuss about sensitization and instrumentation based on transaction flows.

3　　　Compare the transaction testing strategies with the data flow testing strategies.

4　　　What is meant by domain testing? Discuss the procedure for domain testing.

5　　　Write about Huang's theorem. Explain with an example. What are its generalizations and limitations?

6　(a)　Discuss the role of decision table in a test case diagram.
　　(b)　How can we expand the immaterial cases in a decision table?

7　　　What are the principles of state testing? Explain its advantages and disadvantages.

8　　　Write relative merits and demerits of different graph matrix representations.

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Code: 9F00502

MCA V Semester Regular & Supplementary Examinations November/December 2016
SOFTWARE TESTING
(For students admitted in 2011, 2012, 2013 & 2014 only)

Time: 3 hours

Max. Marks: 60

Answer any FIVE questions
All questions carry equal marks
*****

1 (a) To what extent can testing be used to validate that the program is fit for its purpose. Discuss.
   (b) State and explain various kinds of predicate blindness with examples.

2 (a) Discuss various flow graph elements with their notations.
   (b) Explain briefly about requirements, features and functionality of bugs.

3   What are data-flow anomalies? How data flow testing can explore them?

4 (a) Discuss in detail about testability of domains.
   (b) Explain various properties related to ugly domains.

5 (a) What are decision tables? Illustrate the applications of decision tables with example.
   (b) Explain the procedure for specification validation using KV charts.

6 (a) Elaborate with an example, how to convert a specification into a state graph.
   (b) Explain the rules of Boolean algebra.

7 (a) What are the principles of state testing? Explain its advantages and disadvantages.
   (b) Write an algorithm for node reduction.

8 (a) What operations does a toolkit consist for the representation of graph?
   (b) Discuss the relative merits and demerits of different graph matrix representations.

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Code: 9F00502

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MCA V Semester Supplementary Examinations July 2015

SOFTWARE TESTING

(For students admitted in 2009, 2010, 2011 and 2012 only)

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Time: 3 hours   Max Marks: 60

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Answer any FIVE questions

All questions carry equal marks
*****

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1 (a) Define testing. Explain the goals of testing.
   (b) Differentiate testing and debugging.

2 (a) What are the different notations used in the control flow graph? Explain.
   (b) What are the applications of path testing? Explain.

3 (a) Discuss about sensitization and instrumentation based on transaction flows.
   (b) What is the motivation of dataflow testing? Explain.

4 (a) What are the advantages of domain testing? Explain.
   (b) Explain simple domain boundaries and compound predicates.

5 (a) What is meant by path products? Explain with example.
   (b) What are the techniques used to find the minimum number of paths in a graph? Explain with
        example.
        $F(A, B, C, D) = \Sigma(3,$

6 (a) "Decision tables as a basis for test case design" explain.
   (b) Minimize the following function using KV map:

7   Write short note on following:
   (a) Dead state.
   (b) Unreachable state.
   (c) Transition bugs.

8 (a) Write node reduction algorithm.
   (b) What are relations? Give the properties of relations.

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