Hall Ticket No | | | | | | | | | | | Question Paper Code: AIT008

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal, Hyderabad - 500 043

MODEL QUESTION PAPER-I

Four Year B.Tech VII Semester End Examinations, November-2019

Regulations: R16

SOFTWARE TESTING METHODOLOGY

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 70**

Answer ONE Question from each Unit

All Questions Carry Equal Marks

All parts of the question must be answered in one place only

UNIT – I

1.	a)	Define path sensitization and write heuristic the procedure used in path sensitization?	**[7M]**
	b)	Demonstrate the phases in a tester's mental life and Define testing and explain the purpose of testing?	**[7M]**
2.	a)	Discuss about "Traversal marker" form of path instrumentation? Explain Coincidental correctness? Give an example?	**[7M]**
	b)	Explain the procedure used in quantifying the nightmare list to stop Testing?	**[7M]**

UNIT – II

3.	a)	Discuss the three possible interpretations of the decision symbol with two or more out links?	**[7M]**
	b)	Explain the transaction flow testing with an example Distinguish between control flow and transaction flow?	**[7M]**
4.	a)	Define a transaction explain steps involved in an online transaction system.	**[7M]**
	b)	Define the terms i.Clear path segment ii.Loop free path segment iii.Simple path segment	**[7M]**

UNIT – III

5.	a)	Discuss in detail the nice domains and ugly domains with suitable Examples? And Discuss about random testing?	**[7M]**
	b)	Define domain and explain domain model in detail	**[7M]**
6.	a)	Define the bug assumptions for domain testing. And Explain about simple domain boundaries and compound predicates?	**[7M]**
	b)	Explain the following terms i.Domain Testing ii.Linear zing Transformation iii.Non-Linear zing Transformation iv.Canonical program form	**[7M]**

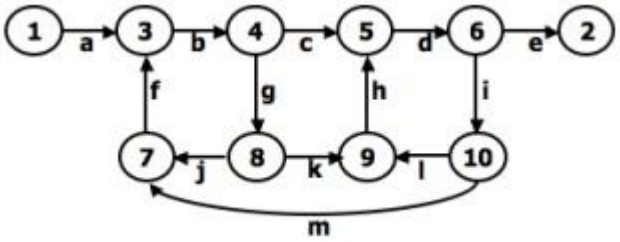
UNIT – IV

7. a) Discuss regular expressions and flow anomaly detection? And Explain a regular expression and flow anomaly detection method With an example and limitations? **[7M]**

   b) Whether the predicates are restricted to binary truth-values or not. Explain. **[7M]**

8. a) Demonstrate using reduction procedure to convert flow graph whose links are labeled into a path expression? Explain each step With flow graph? **[7M]**

   b) Apply node reduction algorithm for the following flow graph **[7M]**



UNIT – V

9 a) Compare the differences between logic based testing, state testing and path testing? **[7M]**

   b) Demonstrate design guidelines for building finite state machines into your code? **[7M]**

10. a) Demonstrate the software implementation issues in state testing?. Discuss tester's comments about state graphs? **[7M]**

    b) Explain Impact of bugs and principles in state testing? **[7M]**

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COURSE OBJECTIVES

The course should enable the students to:

I	Understand the concept of software testing objectives, process criteria, strategies and methods.
II	Demonstrate various software testing issues and solutions in software like unit test, integration, regression and system testing.
III	Demonstrate the techniques and skills on how to use modern software testing tools to support software testing projects.
IV	Understand important concepts of complexity metrics and object oriented metrics.

COURSE OUTCOMES :

CO 1	To understand the basic concepts of testing, path testing and sensitization
CO 2	An Ability to learn about about the transaction flow testing
CO 3	To understand the concepts of domain based testing and logic based testing
CO 4	To describe about the path product and data flow anamoly detection
CO 5	To understand the concepts of transition testing

COURSE LEARNING OUTCOMES :

AIT008.01	Explain the importance of testing and purpose of testing.
AIT008.02	Illustrate different and compare dichotomies of testing.
AIT008.03	Demonstrate the model for testing and different testing levels and role of models.
AIT008.04	Describe the consequences and taxonomy of bugs and different bugs in project environment.
AIT008.05	Illustrate the concepts of path testing and predicate loops and path sensitization.
AIT008.06	Explain Path instrumentation and their applications and link markers.
AIT008.07	List Transaction flows techniques and transaction flow structures and their test databases.
AIT008.08	State Basics of data flow testing and Strategies in data flow testing, applications of dataflow testing.
AIT008.09	Describe Domains and paths and. explain about domains and bugs and their tool effectiveness
AIT008.10	Demonstrate Domains and Interfaces testing.
AIT008.11	Explain about domains and testability
AIT008.12	Describe Logic based testing and Decision tables and compare hardware and software testing.
AIT008.13	Illustrate Path expression and KV Charts and their specifications.
AIT008.14	State Path products and path expression, different laws used in path testing.
AIT008.15	Demonstrate Reduction procedure and applications.
AIT008.16	Explain about Regular expressions
AIT008.17	Demonstrate about Flow anomaly detection
AIT008.18	Explain State Graphs and state testing
AIT008.19	Demonstrate about the Testability Tips.
AIT008.20	Explain finite state behavior in state graphs

MAPPING OF SEMESTER END EXAM TO COURSE LEARNINIG OUTCOMES:

SEE Question No		Course Learning Outcomes		Course Outcomes	Blooms Taxonomy Level
1	a	AIT008.02	Illustrate different and compare dichotomies of testing.	CO 1	Understand
	b	AIT008.04	Describe the consequences and taxonomy of bugs and different bugs in project environment.	CO 1	Remember
2	a	AIT008.03	Demonstrate the model for testing and different testing levels and role of models.	CO 1	Understand
	b	AIT008.04	Describe the consequences and taxonomy of bugs and different bugs in project environment.	CO 1	Understand
3	a	AIT008.07	List Transaction flows techniques and transaction flow structures and their test databases.	CO 2	Understand
	b	AIT008.08	State Basics of data flow testing and Strategies in data flow testing, applications of dataflow testing.	CO 2	Remember
4	a	AIT008.08	State Basics of data flow testing and Strategies in data flow testing, applications of dataflow testing.	CO 2	Understand
	b	AIT008.08	State Basics of data flow testing and Strategies in data flow testing, applications of dataflow testing.	CO 2	Understand
5	a	AIT008.09	Describe Domains and paths and. explain about domains and bugs and their tool effectiveness	CO 3	Understand
	b	AIT008.10	Demonstrate Domains and Interfaces testing.	CO 3	Understand
6	a	AIT008.10	Demonstrate Domains and Interfaces testing.	CO 3	Understand
	b	AIT008.09	Describe Domains and paths and. explain about domains and bugs and their tool effectiveness	CO 3	Understand
7	a	AIT008.17	Demonstrate about Flow anomaly detection	CO 4	Remember
	b	AIT008.16	Explain about Regular expressions	CO 4	Remember
8	a	AIT008.16	Explain about Regular expressions	CO 4	Remember
	b	AIT008.16	Explain about Regular expressions	CO 4	Remember
9	a	AIT008.18	Explain State Graphs and state testing	CO 5	Remember
	b	AIT008.20	Explain finite state behavior in state graphs	CO 5	Understand
10	a	AIT008.18	Explain State Graphs and state testing	CO 5	Remember
	b	AIT008.18	Explain State Graphs and state testing	CO 5	Understand

Signature of Course Coordinator **HOD, CSE**