



INSTITUTE OF AERONAUTICAL ENGINEERING

(AUTONOMOUS)

Dundigal, Hyderabad - 500 043

INFORMATION TECHNOLOGY

ASSIGNMENT QUESTIONS

Course Name	SOFTWARE TESTING METHODOLOGIES
Course Code	A60525
Class	III B. Tech II Semester
Branch	Information Technology
Year	2017– 18
Course Faculty	Mrs. B Pravallika Assistant Professor, IT

OBJECTIVES:

To meet the challenge of ensuring excellence in engineering education, the issue of quality needs to be addressed, debated and taken forward in a systematic manner. Accreditation is the principal means of quality assurance in higher education. The major emphasis of accreditation process is to measure the outcomes of the program that is being accredited.

In line with this, Faculty of Institute of Aeronautical Engineering, Hyderabad has taken a lead in incorporating philosophy of outcome based education in the process of problem solving and career development. So, all students of the institute should understand the depth and approach of course to be taught through this question bank, which will enhance learner's learning process.

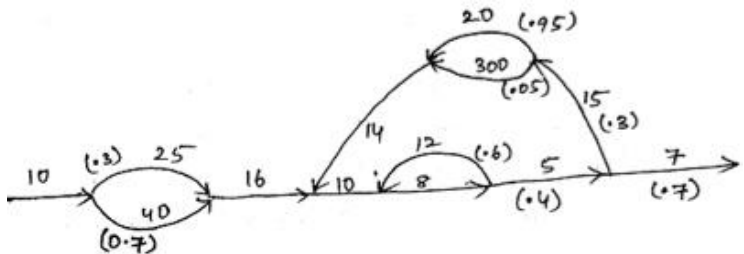
ASSIGNMENT – I & II

S. No.	Question	Blooms Taxonomy Level	Course Outcome
UNIT - I			
1	a. Describe is it impossible for a tester to find all the bugs in a system? Why might it not be necessary for a program to be completely free of defects before it is delivered to its customers? b. Discuss to what extent can testing be used to validate that the program is fit for its purpose?	Understand	1
2	a. Demonstrate the phases in a tester's mental life? b. Describe that testing is not everything? c. Define testing and explain the purpose of testing?	Remember	1
3	a. Explain the principles of test case design? b. List out various dichotomies and Explain?	Understand	2
4	a. State differences between functional and structural testing? b. List factors about the importance of bugs depends and give the metric for it? c. Explain various consequences of bugs? d. Discuss the remedies for test bugs?	Remember	2
5	a. Classify the different kinds of bugs and explain? b. Explain the procedure used in quantifying the nightmare list to stop	Understand	4

S. No.	Question	Blooms Taxonomy Level	Course Outcome
	Testing? c. Explain the five types of structural bugs?		
6	a. Discuss clearly about requirements, features and functionality of bugs? b. Discuss control and sequence bugs? How they can be caught?	Understand	4
7	a. Discuss Interface, Integration and System bugs with an example? b. Explain about resource management problem in software testing? c. Define testing? List out the remedies for test design bugs?	Understand	4
8	a. Demonstrate various types of structural bugs, coding bugs, data bugs and system bugs? Discuss how these bugs can be caught? b. Discuss the classes of bugs in the taxonomy of bugs?	Remember	4
9	a. Discuss about "Traversal marker" form of path instrumentation? b. Explain coincidental correctness? Give an example?	Understand	5
10	a. Explain about program's control flow? Is it useful for path testing? b. Discuss various flow graph elements with their notations?	Understand	5
UNIT – II			
1	a. Discuss that data flow testing is helpful in fulfilling the gaps in Path testing? b. Explain about data flow graphs? c. Name and explain Data flow testing Strategies?	Understand	7
2	a. Demonstrate an anomaly can be detected. Explain different types of data flow anomalies and data flow anomaly state graphs? b. Write applications of data flow testing?	Remember	7
3	a. Demonstrate the transaction flows? Discuss their complications? b. Discuss about static and dynamic anomaly detection? c. Discuss the reasons why only the static anomaly detection is not enough?	Remember	6
4	a. Discuss the following strategies of data flow testing with suitable examples: i. All-predicate-uses (APU) strategy ii. All-computational (ACU) strategy b. Compare the path flow and data-flow testing strategies?	Understand	7
5	a. Explain data-flow model? Discuss various components of it? b. Demonstrate transaction flows occurrence, illustrate with help of examples. Implementation of a transaction flow is usually implicit in the design of the systems control structure and database explains? c. Discuss about sensitization & instrumentation based on transaction Flows?	Understand	6
6	a. Explain the transaction flow testing with an example? b. Distinguish between control flow and transaction flow?	Understand	6
7	a. Define transaction flow structure? Discuss the reasons why the Transaction flows are often structured? b. Discuss the advantages and disadvantages of path selection in Transaction flow?	Remember	7
8	a. Discuss the different data object states in data-flow graphs? b. List nine possible two-letter combinations of the object states of data Anomalies. Classify them as buggy, suspicious and ok?	Understand	7

S. No.	Question	Blooms Taxonomy Level	Course Outcome
9	Consider the following techniques, which are static and which are dynamic techniques Explain them? i. Equivalence Partitioning ii. Use Case Testing iii. Data Flow Analysis iv. Exploratory Testing v. Decision Testing vi. Inspections	Understand	7
10	Discuss the most important difference between the metrics based approach and the expert based approach to test estimation?	Understand	7
UNIT - III			
1	a. Demonstrate a nice domain? Give an example for nice two-dimensional Domains? b. Discuss the following terms: i. Linear domain boundaries ii. Non linear domain boundaries iii. Complete domain boundaries iv. Incomplete domain boundaries c. Discuss in detail the nice domains and ugly domains with suitable examples?	Remember	8
2	a. Demonstrate what is meant by domain testing? Discuss various applications of domain testing? b. Explain with a neat diagram, the schematic representation of Domain testing?	Remember	8
3	a. Explain the domain boundary bugs for two dimensional domains? b. Discuss about systematic boundaries? c. Discuss about random testing?	Understand	8
4	a. Define the following concepts. i. Domains ii. Domain closure iii. Domain dimensionality iv. Bug Assumptions for domain Testing b. Explain simple domain boundaries and compound predicates?	Understand	8
5	a. Discuss about specified and implemented domains? b. Discuss about domain closure and domain dimensionality? c. Explain different one-dimensional domain bugs?	Understand	8
6	a. Describe short notes on i. Ambiguities and contradictions ii. Simplifying the topology iii. Rectifying boundary closures b. Define the terms i. Interior point ii. exterior point iii. Boundary point iv. on point and off point	Understand	8
7	a. Explain the terms i. Domains and range	Understand	8

S. No.	Question	Blooms Taxonomy Level	Course Outcome
	ii. Closure compatibility iii. Domain compatibility testing b. Explain the differences between linearizing transformations and Co-ordinate transformation?		
8	a. Explain in detail about domains and testability b. Explain the following terms <ul style="list-style-type: none"> a. Domain Testing b. Linear zing Transformation c. Non-Linear zing Transformation d. Canonical program form c. Define domain and explain domain model in detail?	Understand	8
9	Demonstrate why it is necessary to develop test cases for both valid and invalid input condition. How important is document for product? How will you test requirement and design Document?	Remember	8
10	Given the following sample of pseudo code? Input number of male rabbits Input number of female rabbits If male rabbits > 0 and female rabbits > 0 then Input Do you want to breed (Yes / No) If breed = "No" Print "Keep male and female rabbits apart!" End if End If. Demonstrate which of the following test cases will ensure that statement "06" is executed?	Remember	9
UNIT – IV			
1	a. Define structured code. Explain lower path count Arithmetic? b. Discuss the looping probability of a path expression? Write arithmetic Rules and explain with an example?	Remember	10
2	a. Demonstrate the steps involved in node reduction procedure. Illustrate all the steps with help of neat labelled diagrams? b. Demonstrate using reduction procedure to convert flow graph whose links are labelled into a path expression. Explain each step with flow graph?	Remember	11
3	a. Explain about Maximum path count arithmetic with an example? b. In reduction procedure explain about: <ul style="list-style-type: none"> i. Cross-Term step ii. Parallel Term iii. Loop Term iv. Comments, Identities and Node - Removal Order 	Understand	10
4	a. State huang's theorem. Explain its implementation .explain its Generalizations and limitations? b. Write short notes on: <ul style="list-style-type: none"> i.Distributive laws ii.Absorption Rule iii.Loops iv.Identity Elements. 	Remember	11

S. No.	Question	Blooms Taxonomy Level	Course Outcome
5	a. Demonstrate how to find approximate minimum no. of paths with an Example? b. Explain the probability of getting path expression with an example?	Understand	10
6	a. Discuss regular expressions and flow anomaly detection? b. Explain a regular expression and flow anomaly detection method With an example and limitations?	Understand	11
7	a. Explain about the mean processing time of a routine with an example? b. Explain the generalizations and limitations of regular expressions?	Understand	11
8	a. Explain the push/pop arithmetic with an example? b. Explain the get/return arithmetic with an example?	Understand	11
9	a. Explain the problem occurred in the regular expressions with an example? b. Explain which method will be useful for regular expressions with an example?	Understand	11
10	Evaluate the mean processing time of a program represented by the following flow graph. Numbers in the brackets are the probabilities and the other numbers are processing times. 	Remember	10

UNIT – V

1	a. Differentiate between good state graphs and bad state graphs? b. Discuss the principles of state testing? Explain its advantages and Disadvantages?	Understand	14
2	a. Compare the differences between logic based testing , state testing and Path testing? b. Explain all the rules in the conversion of specification into a state graph?	Understand	14
3	a. Explain the terms i. No of states ii. Impossible states iii. Equivalent States b. Describe the types of bugs that can cause state graphs?	Understand	14
4	a. Demonstrate the software implementation issues in state testing? b. Discuss tester's comments about state graphs?	Remember	14
5	a. Explain state testing and testability tips with an example? b. Explain state graphs with implementation with an example?	Understand	14
6	a. Define the following terms i. states ii. Inputs and transitions iii. Outputs iv. State tables b. Define the terms i. Unreachable states ii. Unspecified and contradictory transitions	Remember	14

S. No.	Question	Blooms Taxonomy Level	Course Outcome
7	a. Illustrate designer's comments about state graphs? b. Draw a hard disk recovery a state graph with a state table?	Understand	14
8	Demonstrate design guidelines for building finite state machines into your code?	Remember	14
9	a. Demonstrate an algorithm for node reduction (general)? b. Illustrate the applications of node reduction algorithm?	Remember	15
10	a. Discuss a node reduction algorithm in terms of matrix operations? b. Define graph matrices and their applications?	Understand	15

Prepared By : Mrs B Pravallika, Assistant Professor

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