Sri Indu Institute of Engineering & Technology

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Affiliated to JNTUH, Hyderabad.

COURSE FILE

ON

SOFTWARE TESTING METHODOLOGIES

Course Code - CS615PE

III B.Tech II-SEMESTER

A.Y.: 2022-2023

Prepared by

Mrs.E.RUPA
Assistant Professor

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Academic Year	2022-2023
Course Title	SOFTWARE TESTING METHODOLOGIES
Course Code	CS615PE
Programme	B.Tech
Year & Semester	III year II-semester
Branch & Section	CSE-A
Regulation	R18
Course Faculty	Mrs. E. RUPA, Assistant Professor

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

INSTITUTE VISION AND MISSION

Vision:

To become a premier institute of academic excellence by providing the world class education that transforms individuals into high intellectuals, by evolving them as empathetic and responsible citizens through continuous improvement.

Mission:

IM1: To offer outcome-based education and enhancement of technical and practical skills.

IM2: To continuous assess of teaching-learning process through institute-industry collaboration..

IM3: To be a centre of excellence for innovative and emerging fields in technology development with state-of-art facilities to faculty and students fraternity.

IM4: To create an enterprising environment to ensure culture, ethics and social responsibility among the stakeholders

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

DEPARTMENT VISION AND MISSION

Vision:

To become a prominent knowledge hub for learners, strive for educational excellence with innovative and industrial techniques so as to meet the global needs.

Mission:

DM1 : To provide ambience that enhances innovations, problem solving skills, leadership qualities, decision making, team-spirit and ethical responsibilities.

DM2 : To impart quality education with professional and personal ethics, so as to meet the challenging technological needs of the industry and society.

DM3 : To provide academic infrastructure and develop linkage with the world class organizations to strengthen industry-academia relationships for learners.

DM4 : To provide and strengthen new concepts of research in the thrust area of Computer Science and Engineering to reach the needs of Government and Society.

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PROGRAM EDUCATIONAL OBJECTIVES

PEO1: To develop trained graduates with strong academic and technical skills of modern computer science and engineering.

PEO2: To promote trained graduates with leadership qualities and the ability to solve real time problems using current techniques and tools in interdisciplinary environment.

PEO3: To motivate the graduates towards lifelong learning through continuing education and professional development.

PROGRAM SPECIFIC OUTCOMES

PSO1 : **Professional Skills:** To implement computer programs of varying complexity in the areas related to Web Design, Cloud Computing, Network Security and Artificial Intelligence.

PSO2: **Problem-Solving Skills**: To develop quality products using open ended programming environment.

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PROGRAMME OUTCOMES (POs)

PO1: **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: **Problem analysis:** Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: **Design/development of solutions:**Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech. in COMPUTER SCIENCE AND ENGINEERING

III YEAR COURSE STRUCTURE AND SYLLABUS (R18)

Applicable From 2018-19 Admitted Batch

III YEAR I SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS501PC	Formal Languages & Automata Theory	3	0	0	3
2	CS502PC	Software Engineering	3	0	0	3
3	CS503PC	Computer Networks	3	0	0	3
4	CS504PC	Web Technologies	3	0	0	3
5	CS515PE	Professional Elective -I	**3**	**0**	**0**	**3**
6		Professional Elective -II	3	0	0	3
7	CS505PC	Software Engineering Lab	0	0	3	1.5
8	CS506PC	Computer Networks & Web Technologies Lab	0	0	3	1.5
9	EN508HS	Advanced Communication Skills Lab	0	0	2	1
10	*MC510	Intellectual Property Rights	3	0	0	0
		Total Credits	**21**	**0**	**8**	**22**

III YEAR II SEMESTER

S. No.	Course Code	Course Title	L	T	P	Credits
1	CS601PC	Machine Learning	3	1	0	4
2	CS602PC	Compiler Design	3	1	0	4
3	CS603PC	Design and Analysis of Algorithms	3	1	0	4
4	CS615PE	Software Testing Methodologies(PE-III)	3	0	0	3
5		Open Elective-I	3	0	0	3
6	CS604PC	Machine Learning Lab	0	0	3	1.5
7	CS605PC	Compiler Design Lab	0	0	3	1.5
8		Professional Elective-III Lab	0	0	2	1
9	*MC609	Environmental Science	3	0	0	0
		Total Credits	**18**	**3**	**8**	**22**

***MC - Environmental Science – Should be Registered by Lateral Entry Students Only.**

Note: Industrial Oriented Mini Project/ Summer Internship is to be carried out during the summer vacation between 6th and 7th semesters. Students should submit report of Industrial Oriented Mini Project/ Summer Internship for evaluation.

Professional Elective-I

CS511PE	Information Theory & Coding
CS512PE	Advanced Computer Architecture
CS513PE	Data Analytics
CS514PE	Image Processing
CS515PE	Principles of Programming Languages

Professional Elective - II

CS521PE	Computer Graphics
CS522PE	Advanced Operating Systems
CS523PE	Informational Retrieval Systems
CS524PE	Distributed Databases
CS525PE	Natural Language Processing

Professional Elective - III

CS611PE	Concurrent Programming
CS612PE	Network Programming
CS613PE	Scripting Languages
CS614PE	Mobile Application Development
CS615PE	Software Testing Methodologies

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

CS615PE: (Professional Elective - III)
SOFTWARE TESTING METHODOLOGIES
III Year B.Tech. CSE II-Sem

L T P C
3 0 0 3

Prerequisites

1. A course on "Software Engineering"

Course Objectives

1. To provide knowledge of the concepts in software testing such as testing process, criteria, strategies, and methodologies.
2. To develop skills in software test automation and management using latest tools.

Course Outcomes:

Design and develop the best test strategies in accordance to the development model.

UNIT - I

Introduction: Purpose of testing, Dichotomies, model for testing, consequences of bugs, taxonomy of bugs Flow graphs and Path testing: Basics concepts of path testing, predicates, path predicates and achievable paths, path sensitizing, path instrumentation, application of path testing.

UNIT - II

Transaction Flow Testing: transaction flows, transaction flow testing techniques.
Dataflow testing: Basics of dataflow testing, strategies in dataflow testing, application of dataflow testing.
Domain Testing:domains and paths, Nice & ugly domains, domain testing, domains and interfaces testing, domain and interface testing, domains and testability.

UNIT - III

Paths, Path products and Regular expressions: path products & path expression, reduction procedure, applications, regular expressions & flow anomaly detection.
Logic Based Testing: overview, decision tables, path expressions, kv charts, specifications.

UNIT - IV

State, State Graphs and Transition testing: state graphs, good & bad state graphs, state testing, Testability tips.

UNIT - V

Graph Matrices and Application: Motivational overview, matrix of graph, relations, power of a matrix, node reduction algorithm, building tools. (Student should be given an exposure to a tool like JMeter or Win-runner).

Text Books:

1. Software Testing techniques - Baris Beizer, Dreamtech, second edition.
2. Software Testing Tools – Dr. K. V. K. K. Prasad, Dreamtech.

References:

1. The craft of software testing - Brian Marick, Pearson Education.
2. Software Testing Techniques – SPD(Oreille)

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Department of Computer Science and Engineering

Course Outcomes

Course: Software Testing Methodologies (C324) Class: III – II SEM – A - Section

After completing this course the student will be able to:

C324.1 Recognize the importance , purpose of testing and its applications in software development life cycle. **(Knowledge)**

C324.2 List transaction flows ,transaction flow techniques and implementation comments in software testing **(Analysis)**

C324.3 Design reduction procedure and its applications , lists regular expressions and data flow anomaly detection. **(Synthesis)**

C324.4 Discuss about decision tables, kv charts, specifications.(**Comprehension**)

C324.5 Design and implement state graph, state testing, good state graph, bad state graph and their testability tips. **(Synthesis)**

C324.6 Describe graph Matrices, matrix properties and node reduction algorithm. **(Knowledge)**

Mapping of course outcomes with program outcomes:

High -3 Medium -2 Low-1

PO/PSO/ CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C324.1	3	1	2	-	2	-	-	-	-	2	-	-	1	-
C324.2	3	1	2	-	2	-	-	-	-	2	-	-	2	-
C324.3	2	2	1	-	-	-	-	-	-	-	-	-	1	2
C324.4	3	2	1	-	-	-	-	-	-	-	-	-	-	2
C324.5	2	2	1	-	2	-	-	-	-	-	-	-	-	-
C324.6	3	2	2	-	1	-	-	-	-	2	-	-	-	-
C324	2.6	1.6	1.5	-	1.75	-	-	-	-	2	-	-	1.3	2

Department of Computer Science and Engineering

CO-PO Mapping Justification

C324.1 Recognizethe importance , purpose of testing and its applications in software development life cycle. **(Knowledge)**

	Justification
PO1	Apply the knowledge of testing .
PO2	To identify the types of testing and its applications.
PO3	Design solutions for the software development life cycle.
PO5	Appropriate techniques are used to classify the bugs into different categories
PO10	Effectively as an communication for the testing and understand the process of testing.
PSO1	To implement computer program consequences and understand the importance of bugs.

C324.2 List transaction flows ,transaction flow techniques and implementation comments in software testing **(Analysis)**

	Justification
PO1	Apply the knowledge of transaction techniques.
PO2	Problem Analysis involves the application of various techniques to identify the transaction flow techniques.
PO3	Design solutions to identify the complications in a transaction flow testing method and anomalies in data flow testing
PO5	Apply appropriate techniques for data flow anomaly state graphs and control flow graphs and represent the state of the data objects.
PO10	communication effectively to analyse various strategies of data flow testing.
PSO1	To implement software testing for transaction flow testing and data flow testing.

C324.3 Design reduction procedure and its applications , lists regular expressions and data flow anomaly detection. **(Synthesis)**

	Justification
PO1	Apply reduction procedure algorithm to a control flow graph and simplify it into a single path expression
PO2	Identify the probability of paths and understand the need for finding the probabilities.
PO3	Design complimentary operations such as PUSH / POP or GET / RETURN are interpreted in a flow graph.
PSO1	Designing reduction procedures, listing regular expressions and performing data flow anomaly detection.
PSO2	The ability to calculate mean processing time of a routine of a given flow graph.

C324.4 Discuss about decision tables, kv charts, specifications.(**Comprehension**)

	Justification
PO1	Engineering Knowledge encompasses a deep understanding the formal methods used in system design and analysis.By discussing decision tables.
PO2	Problem analysis is at the core of decision table and karnaugh chart discussions.
PO3	Design/development process, optimization is a key consideration,to discuss specifications.
PSO2	Problem –solving skills are cultivated through structured problem analysis. Discussing decision tables, KV Charts and specifications.

C324.5 Design and implement state graph, state testing, good state graph, bad state graph and their testability tips. **(Synthesis)**

	Justification
PO1	Apply the knowledge for graphical representation of state graphs.
PO2	Analyse the Software implementation of sate graphs
PO3	The design/development of solutions necessitates a structured approach. Designing state graphs and implementing state testing require students to follow a systematic design process.
PO5	Modern tool usage aligns with the objective of designing and implementing state graphs. Utilizing graphical modelling tools that facilitate the creation and visualization of state graph.

C324.6 Describe graph Matrices, matrix properties and node reduction algorithm. **(Knowledge)**

	Justification
PO1	Apply the Knowledge of graph matrices, understanding testing theory
PO2	Implementation of node-reduction algorithms.
PO3	Describing graph matrices and implementing node reduction algorithms are skills that aid in managing the complexity of problems.
PO5	Modern tools for matrix analysis are integral to describing graph matrices and their properties.
PO10	Graph matrices and node reduction algorithms may be used in various contexts.

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

ACADEMIC CALENDAR 2022-23

B. Tech./B. Pharm. III YEAR I & II SEMESTERS

I SEM

S. No	Description	Duration	
		From	To
1	Commencement of I Semester classwork	**09.09.2022**	
2	1st Spell of Instructions (including Dussehra Recess)	09.09.2022	10.11.2022 (9 Weeks)
3	Dussehra Recess	03.10.2022	08.10.2022 (1 Week)
4	First Mid Term Examinations	11.11.2022	17.11.2022 (1 Week)
5	Submission of First Mid Term Exam Marks to the University on or before	24.11.2022	
6	2nd Spell of Instructions	18.11.2022	12.01.2023 (8 Weeks)
7	Second Mid Term Examinations	16.01.2023	21.01.2023 (1 Week)
8	Preparation Holidays and Practical Examinations	23.01.2023	28.01.2023 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	30.01.2023	
10	End Semester Examinations	30.01.2023	11.02.2023 (2 Weeks)

Note: No. of Working/ instructional days: 92

II SEM

S. No	Description	Duration	
		From	To
1	Commencement of II Semester classwork	**13.02.2023**	
2	1st Spell of Instructions	13.02.2023	08.04.2023 (8 Weeks)
3	First Mid Term Examinations	10.04.2023	15.04.2023 (1 Week)
4	Submission of First Mid Term Exam Marks to the University on or before	22.04.2023	
5	2nd Spell of Instructions (including Summer Vacation)	17.04.2023	24.06.2023 (10 Weeks)
6	**Summer Vacation**	15.05.2023	27.05.2023 (2 Weeks)
7	Second Mid Term Examinations	26.06.2023	01.07.2023 (1 Week)
8	Preparation Holidays and Practical Examinations	03.07.2023	08.07.2023 (1 Week)
9	Submission of Second Mid Term Exam Marks to the University on or before	08.07.2023	
10	End Semester Examinations	10.07.2023	22.07.2023 (2 Weeks)

Note: No. of Working/ instructional days: 90

REGISTRAR

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

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TIME TABLE FOR A.Y 2022-23

Class: III-B. Tech CSE -A **Semester: II** **LH. NO: A-201** **W.E.F:13-02-2023**

Period/ Day	1 9:40-10:30	2 10:30-11:20	3 11:20-12:10	4 12:10-1:00	1:00-1:30	5 1:30-2:20	6 2:20-3:10	7 3:10-4:00
Monday	DAA	CD	LIB	STM	LUNCH	STM LAB(BATCH-I)/CD LAB(BATCH-II)		
Tuesday	STM	DAA	DAA/ML(T)	ML		FIOT	STM	SPORTS
Wednesday	FIOT	CD	INT	STM		ML/CD(T)	CO-C/SS/DAA	
Thursday	FIOT	ML LAB(BATCH-I)/STM LAB(BATCH-II)				DAA	CD	STM
Friday	CD	COUN	ML	FIOT		ML LAB(BATCH-II)/CD LAB(BATCH-I)		
Saturday	CD	FIOT	CD/DAA(T)	DAA		ML		DAA

(T) – Tutorial (concern faculty)

Subject Code	Subject Name	Name of the Faculty	Subject Code	Subject Name	Name of the Faculty
CS601PC	Machine Learning	Mrs N Shilpa		Fundamentals of Internet of Things	Mrs. M.Sruthi
CS602PC	Compiler Design	Dr. Sasikumar D	CS604PC	Machine Learning Lab	Mrs N Shilpa/ K.Manmadha / V. Divya
CS603PC	Design and Analysis of Algorithms	Mr A Vijay Kumar	CS605PC	Compiler Design Lab	Dr. Sasikumar D / Ms K Mounika/ P.Swathi
CS615PE	Software Testing Methodologies	Mrs E Rupa	CS625PE	Software Testing Methodologies Lab	Mrs E Rupa/ Mrs S Akhila / Mrs. M.Sruthi
	CO-C/SS/DAA/ Cyber Security	Mrs. M.Sruthi	LIB	Library	Mrs K.Manmadha
Sports	Sports	Mr A Vijay Kumar	COUN	Counselling	Mrs.A.Sudha
Internet	Internet	Mrs.A.Sudha	CS601PC	Machine Learning	Mr M Dattatreya Goud (Adjunct)
			MC609	Environmental Science(LE)	Mr D Nagaraju
Class In-Charge : Mrs N Shilpa		**Mentor 1 :** Mrs N Shilpa		**Mentor 2:** Mrs E Rupa	

Class In-Charge HOD PRINCIPAL

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LESSON PLAN

Course Title	SOFTWARE TESTING METHODOLOGIES
Course Code	CS615PE
Programme	B.Tech
Year & Semester	III-year II-semester
Regulation	R18
Course Faculty	Mrs.E.RUPA, Assistant Professor , CSE

S.NO	Unit	TOPIC	Number of Sessions Planned	Teaching method/Aids	REFERENCE
1	I	Introduction of Testing	1	Black Board	T1
2		Purpose of testing	1	Black Board	T1
3		Dichotomies	1	Black Board	T1
4		model for testing	1	Black Board	T1
5		consequences of bugs	1	Black Board	T1
6		taxonomy of bugs Flow graphs	1	Black Board	T1
7		Path testing Introduction	1	Black Board	T1
8		Basics concepts of path testing	1	Black Board	T1
9		Predicates Examples	1	Black Board	T1
10		path predicates and achievable paths	1	Black Board	T1
11		path sensitizing	1	Black Board	T1
12		Path instrumentation	1	Black Board	T1
13		application of path testing.	1	Black Board	T1
14		Transaction Flow Testing Introduction	1	Black Board	T1

15	II	transaction flows	1	Black Board	T1
16		transaction flow testing techniques	1	Black Board	T1
17		Dataflow testing	1	Black Board	T1
18		Basics of dataflow testing	1	Black Board	T1
19		strategies in dataflow testing	1	Black Board	T1
20		application of dataflow testing	1	Black Board	T1
21		Domain Testing Introduction	1	Black Board	T1
22		domains and paths	1	Black Board	T1
23		Nice & ugly domains	1	Black Board	T1
24		domain testing	1	Black Board	T1
25		domains and interfaces testing	1	Black Board	T1
26		Domains and testability	1	Black Board	T1
27	III	Paths, Path products and Regular expressions	1	Black Board	T1
28		path products & path expression	1	Black Board	T1
29		Reduction procedure, applications	1	Black Board	T1
30		regular expressions & flow anomaly detection	1	Black Board	T1
31		Logic Based Testing Introduction	1	Black Board	T1
32		decision tables, path expressions	1	Black Board	T1
33		kv charts, specifications	1	Black Board	T1
34	IV	State, State Graphs and Transition testing Introduction	1	Black Board	T1
35		good & bad state graphs	1	Black Board	T1
36		state testing	1	Black Board	T1
37		Testability tips	1	Black Board	T1
38		good & bad state graphs Examples	1	Black Board	T1
39		Motivational overview	1	Black Board	T1

40	V	matrix of graph	1	Black Board	T1
41		relations, power of a matrix	1	Black Board	T1
42		node reduction algorithm	1	Black Board	T1
43		building tools	1	Black Board	T1

Text Books:

1. Software Testing techniques - Baris Beizer, Dreamtech, second edition.
2. Software Testing Tools – Dr. K. V. K. K. Prasad, Dreamtech.

References:

1. The craft of software testing - Brian Marick, Pearson Education.
2. Software Testing Techniques – SPD(Oreille)
3. Software Testing in the Real World – Edward Kit, Pearson.
4. Effective methods of Software Testing, Perry, John Wiley.
5. Art of Software Testing – Meyers, John Wiley

WEB REFERENCES

S.No	Web Link
1	https://www.youtube.com/watch?v=tHuLi8sXK7c
2	https://www.youtube.com/watch?v=f4Olbtllro0
3	https://www.youtube.com/watch?v=lRVhLcndN_s
4	https://www.youtube.com/watch?v=iGqTHWdCYbM

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LECTURE NOTES

UNIT-1 Link:

https://drive.google.com/file/d/1fR1QMNRaB5DCcD763CtUCYR4mm2bqNBF/view?usp=sharing

UNIT-2 Link:

https://drive.google.com/file/d/1MkBpRqfzT0lPsIRua1VglgG2ELUyxGBs/view?usp=sharing

UNIT-3 Link:

https://drive.google.com/file/d/1C4vog3qkj6dlyqLTccI3N0tEooLto_HT/view?usp=sharing

UNIT-4 Link:

https://drive.google.com/file/d/1crvkUPM9y4QfX9zuDXdyam639aKWpeIw/view?usp=sharing

UNIT-5 Link:

https://drive.google.com/file/d/1BWIw_nQ0u3f421OPXpys73jYBtDiewKH/view?usp=sharing

List of Power point presentations

UNIT-1 Link:

https://docs.google.com/presentation/d/1RZQDiRc8q-rOGF1hm5eQ6GItWgIJ0-S7/edit?usp=sharing&ouid=116740267257898588224&rtpof=true&sd=true

UNIT-2 Link:

https://docs.google.com/presentation/d/1npoie8ovVxXLOQX_vMpgaKmK3KsnjCe9/edit#slide=id.p1

UNIT-3 Link:

https://docs.google.com/presentation/d/1ar7BqJRCjxzNeYOsixlZCtuDtKAupPa1/edit#slide=id.p1

UNIT-4 Link:

https://docs.google.com/presentation/d/1jmi2xIygd9GKZggZ24VDmMGB29ZV3dXx/edit#slide=id.p1

Code No: 156CW **R18**

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B. Tech III Year II Semester Examinations, February - 2023
SOFTWARE TESTING METHODOLOGIES
(Common to CSE, IT)

Time: 3 Hours **Max. Marks: 75**

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

	Define path testing.	[2]
b)	What is the difference between an error and a bug?	[3]
c)	Write a short note on random testing.	[2]
d)	What is the significance of data flow testing?	[3]
e)	Write a short note on path expressions.	[2]
f)	List out the different operators that are used to solve any boolean algebra.	[3]
g)	Define a transition bug.	[2]
h)	What is good state graph?	[3]
i)	Define a connection matrix.	[2]
j)	List the applications of graph matrices.	[3]

PART – B

(50 Marks)

2.a)	Differentiate between testing and debugging.	
b)	Describe the model for testing.	[5+5]
	OR	
3.	Classify the different types of bugs and explain.	[10]
4.a)	State and explain the transaction flow testing techniques.	
b)	Compare static slicing with dynamic slicing.	[6+4]
	OR	
5.	How developers and testers treat nice and ugly domains? Illustrate with the help of examples.	[10]
6.a)	Illustrate maximum path count arithmetic with an example.	
b)	Describe the usage of regular expression in flow anomaly detection.	[6+4]
	OR	
7.a)	Justify the use of decision table implementation for designing test cases.	
b)	Explain the procedure for specification validation using KV charts.	[5+5]

8. Explain the following terms:
   a) Design guideline for building finite state machine
   b) Inessential finite state behavior. [5+5]

OR

9.a) Write short notes on testability tips.
   b) Summarize the concept transition testing. [5+5]

10.a) Describe node-term reduction optimization.
   b) Give a brief summary on relations. [5+5]

OR

11. Write an algorithm for node reduction using matrix operations and explain. [10]

---ooOoo---

CodeNo: 156CW **R18**

JAWAHARLALNEHRUTECHNOLOGICALUNIVERSITY HYDERABAD
B.TechIIIYearIISemesterExaminations,August-2022
SOFTWARE TESTING METHODOLOGIES
(CommontoCSE,IT)

Time:3Hours **Max.Marks:75**

Answer any five questions
Allquestionscarryequalmarks

1.a) Towhatextentcantestingbeusedtovalidatethattheprogramisfitforitspurpose? Discuss and explain various dichotomies.
b) Explainvariousconsequencesofbugs.Whataretheremediesfortestbugs?Explain. [7+8]

2.a) Stateand explainvarious pathselection rulesfor path testing.
b) Whatisthepurposeoftesting?Discusstheprinciplesoftestcasedesign. [7+8]

3.a) Whatarethetransactionflows?Explaintheircomplications.
b) Discussthefollowingstrategies ofdataflowtestingwith suitable examples:
i) All-predicate-uses(APU)strategy
ii) All-computational(ACU)strategy. [7+8]

4.a) WhatismeantbyData-flowtesting?Comparethepathflowanddata-flowtesting strategies.
b) Whatismeantbyanicedomain?Giveanexamplefornicetwo-dimensionaldomains. [8+7]

5.a) Howcanwecheck the consistencyandcompleteness inthedecisiontables?Explain.
b) Definepathproduct,pathexpressionand pathsum.Giveexamplesfor these. [7+8]

6.a) Define decision table and explain don't care and impossible terms.
b) ExplaintestcasedesignandsketchKVchartsofthreeandfourvariables. [7+8]

7.a) Whatareprinciplesofstatetesting?Explainitsadvantagesanddisadvantages.
b) Differentiate between good state graphs and bad state graphs. [8+7]

8.a) WriteanalgorithmforNodeReductionandillustratetheapplicationsofit. Define
b) graph matrices and evaluate graph matrix with pictorial graph. [8+7]

---oo0oo---

R18

Code No: 156CW

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, July - 2023

SOFTWARE TESTING METHODOLOGIES

(Common to CSE, IT, ITE, CSE(DS), CSE(IOT))

Time: 3 Hours Max. Marks: 75

Note: i) Question paper consists of Part A, Part B.
ii) Part A is compulsory, which carries 25 marks. In Part A, Answer all questions.
iii) In Part B, Answer any one question from each unit. Each question carries 10 marks and may have a, b as sub questions.

PART – A

(25 Marks)

1.a)	List the criteria for path selection.	[2]
b)	Compare testing and debugging.	[3]
c)	Outline the usage of transactional graph.	[2]
d)	Differentiate slicing and dicing.	[3]
e)	What is path expression?	[2]
f)	Why is regular expression important in STM?	[3]
g)	Define absorption rule.	[2]
h)	Describe state graph.	[3]
i)	Infer the problem with pictorial graph.	[2]
j)	How the graph is represented in matrix?	[3]

PART – B

(50 Marks)

2.a)	Examine flow graph elements in detail.	
b)	Explain path sensitizing in detail.	[5+5]
	OR	
3.a)	Identify path testing criteria in detail.	
b)	Discover the importance of bugs.	[5+5]
4.a)	Explain the model of domain testing in detail.	
b)	Analyze transactional flow testing techniques.	[5+5]
	OR	
5.a)	Compare nice and ugly domain.	
b)	Estimate the restriction of domain testing.	[5+5]
6.	Experiment with reduction procedure algorithm with example.	[10]
	OR	
7.a)	Inspect the functions of KV charts for two variable.	
b)	Identify the usage of decision table in testing with example.	[5+5]
8.a)	Infer the principles of state testing.	
b)	Write short notes on: i) Transition Bugs ii) Unreachable states iii) Dead States.	[5+5]
	OR	
9.a)	Compare essential and inessential of finite state behavior.	
b)	Discover the steps to convert specification into state-graph.	[5+5]
10.	Demonstrate partition algorithm in detail.	[10]
	OR	
11.a)	Discover the properties of relations.	
b)	Identify the features of JMeter tool. How it will assist the tester?	[5+5]

Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

I- Mid Examinations, MAY-2023

Set – I

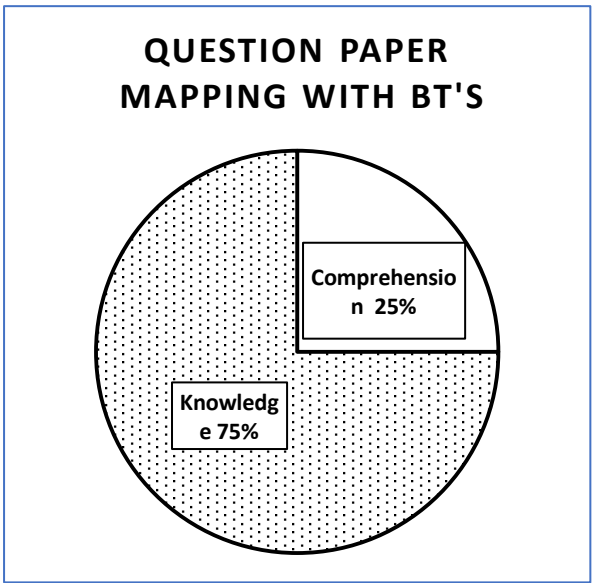
Year &Branch: III-CSE(A,B,C) Date: 9 -5-23(AN)

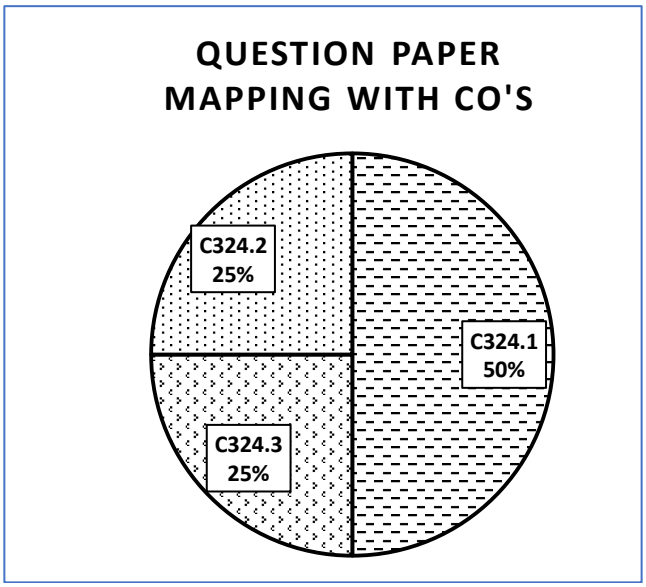
Subject:STM Marks: 10 Time: 60 min

Answer any **TWO** Questions. All Question Carry Equal Marks 2*5=10 marks

(This question paper is prepared with Course Outcome and BT's mapping)

1. State and Explain various dichotomies in software testing. (Knowledge)(C324.1)(5M)
2. Write Path Instrumentation with an example. (Knowledge)(C324.1)(5M)
3. Explain Nice and Ugly domains with an example. (Comprehension)(C324.2)(5M)
4. Describe Path products, Path sum and path expressions with an example. (Knowledge)(C324.3)(5M)





Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

I - Mid Examinations, MAY -2023

Set – II

Year & Branch: III-CSE(A,B,C) Date: 9 -5 -23(AN)

Subject: STM Marks: 10 Time: 60 min

Answer any **TWO** Questions. All Question Carry Equal Marks 2*5=10 marks

(This question paper is prepared with Course Outcome and BT's mapping)

1.Discribe various Consequences of bugs ? (Knowledge)(C324.1)(5M)

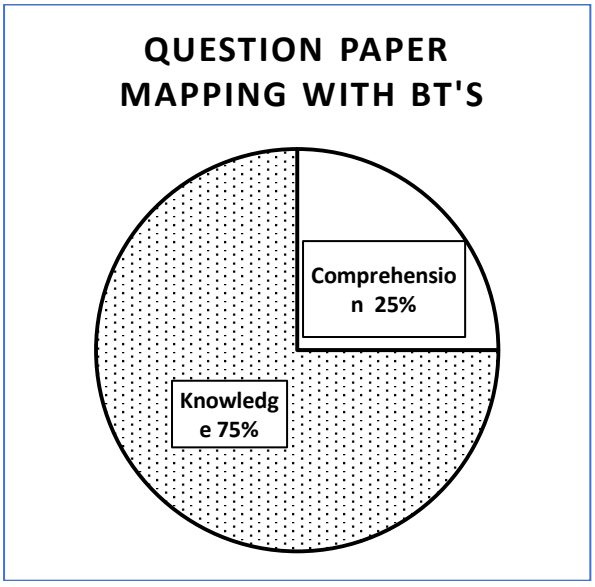
2. Write about taxonomy for bugs. (Knowledge)(C324.1)(5M)

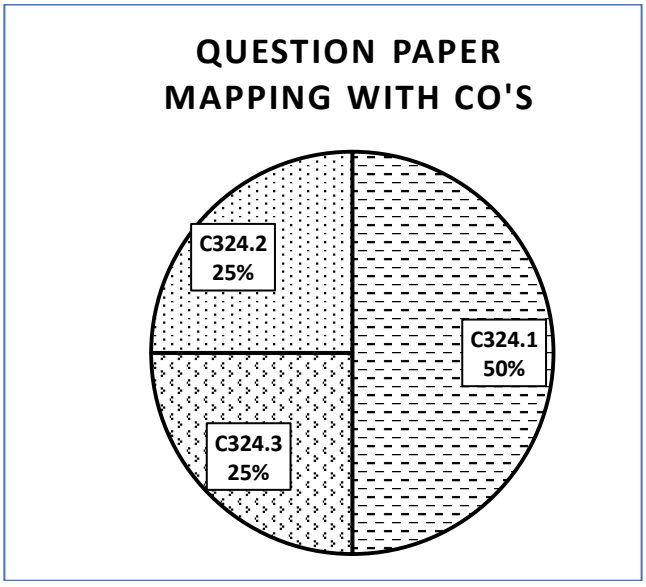
3.Explain Transaction flow testing, illustrate with help of examples.

(Comprehension)(C324.2)(5M)

4. Describe Path products, Path sum and path expressions with an example.

(Knowledge)(C324.3)(5M)





Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.TECH. IIIYEAR II SEM., I Mid Term Examinations, MAY – 2023

SOFTWARE TESTING METHODOLOGIES

Objective Exam

Name:_____Hall Ticket No. | | | | | | | | | | |

Answer All Questions. All Questions Carry Equal Marks.Time: 20 Min. Marks: 10.

I. Choose the correct alternative:

1. What is the purpose of testing? [ ]
a) To find the error b) To show program has bug
c) To correct the error d) None of these

2. The information about the transaction gets lost, the resulting bug is called [ ]
a) Mildb) Serious c) Extreme d) All of the above

3. A node which is giving two outputs is called [ ]

a) Junction b) Loop c) Decision d) None of these

4. Which of the following is path instrumentation technique [ ]

a) Sensitization b) Implementation c) Interpretive trace program d) All of the above

5. The transaction flow graph is used for _____ testing. [ ]

a) Unit Testing b) Functional testing c) Structural Testing d) Integration Testing

6. Treating each child as a new flow is called [ ]

a) Biosis b) Mitosis c) Absorption d) Junction

7. In data object state 'c' is used for [ ]

a) Control flow graph b) Calculation part c) Classificationd) All of the above

8. Nice domains should not be [ ]

a) Linear b) Simply Connected c) Concave d) Complete

9. X+X=X is _____ Rule. [ ]

a) Absorption b) Associative c) Distributive d) Commutative

10.The name of the path that consists of two successive path segments is expressed as [ ]

a) Path Product b) Path elements c) Path Testing d) All of the these

II. Fill in the blanks:

11. Functional testing is also known as _____.

12. _____ are not fixed and changes its content after a specified period of time.

13. The case statements or jump tables are examples of _____ branches.

14. Link marker is also called as _____.

15. Unit of work done is called as _____.

16. Von Newman Machine is a _____ machine.

17. Domain Testing is an example of _____.

18. The set of output values produced by a function is called _____.

19. _____ denotes paths in parallel between two nodes.

20. The null set of paths is denoted by _____.

Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

II- Mid Examinations, JUNE-2023

Set – I

Year & Branch: III-CSE-A, B,C Date: 27/06/2023(AN)

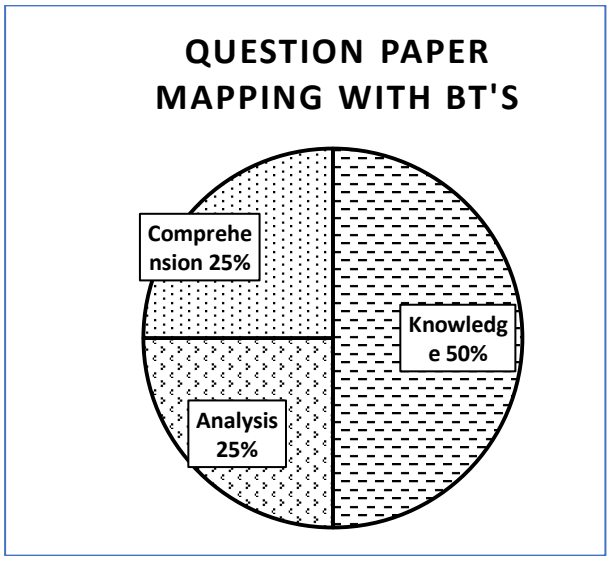
Subject: STM Marks: 10 Time: 60 min

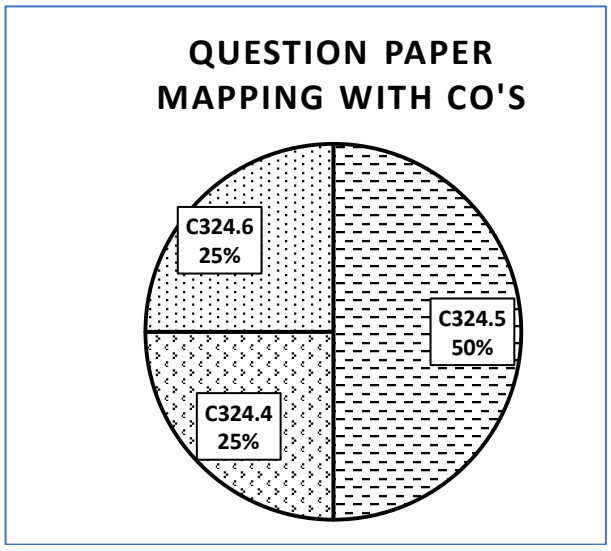
Answer any **TWO** Questions. All Question Carry Equal Marks 2*5=10 marks

(This question paper is prepared with Course Outcome and BT's mapping)

1. Illustrate the applications of decision tables. How is a decision table useful in testing? Explain with an example. (Comprehension) (C324.4)(5M)
2. Differentiate between good state and bad state graphs. (Analysis)(C324.5)(5M)

3. Write the principles of state testing? Explain advantages and disadvantages. (Knowledge)(C324.5)(5M)
4. Write an algorithm for Node Reduction using graph matrix. (Knowledge)(C324.6)(5M)





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Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

II- Mid Examinations, JUNE-2023

Set – II

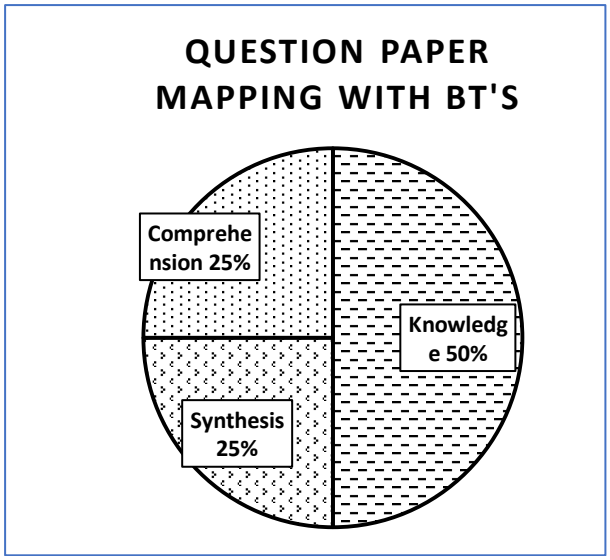
Year & Branch: III-CSE-A, B,C Date: 27/06/2023(AN)

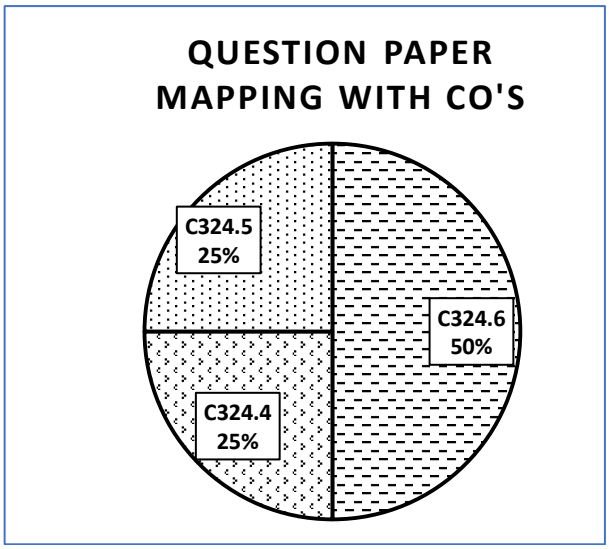
Subject:STM Marks: 10 Time: 60 min

Answer any **TWO** Questions. All Question Carry Equal Marks 2*5=10 marks

(This question paper is prepared with Course Outcome and BT's mapping)

1. Explain the Boolean algebra rules. (Comprehension)(C324.4)(5M)
2. Write about suitable examples for state graphs. (Knowledge)(C324.5)(5M)
3. What is a relation? Explain types of relations. (Synthesis)(C324.6)(5M)
4. Write an algorithm for Node Reduction using graph matrix. (Knowledge)(C324.6)(5M)





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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

B.TECH. III YEAR II SEM., II Mid Term Examinations, JUNE – 2023

SOFTWARE TESTING METHODOLOGIES

Objective Exam

Name:_____ Hall Ticket No. | | | | | | | | | | |

Answer All Questions. All Questions Carry Equal Marks. Time: 20 Min. Marks: 10.

I. Choose the Correct Answers

1.The point that lies between two specific points of a domain is [ ]

a) Off point b) On point

c) Boundary point d) Extreme point

2. Span is defined as [ ]

a) Largest value b)Range of values

c) Smallest value d) Middle value

3.The list of names of conditions is known as [ ]

a)Condition Stub b) Condition Entry

c)Action Entry d)Action stub

4.The rules that are used when all the rules failed to meet the conditions are [ ]

a) Conditional rules b) Action rules

c)Action entries d) Default rules

5.The elements of decision table are [ ]

a)Condition stub b)Condition entry

c) Action stub d) Action entry e) All of the above

6.The bugs in state graphs are due to [ ]

a)No of states b) Impossible states

c)Equivalent states d)All of the above

7.The false arithmetic rule for binary weight is [ ]

a)1 +1=1 b)1*1=1

c) 1+0=0 d)1+0=1

8.Equivalence relation need not satisfy [ ]

a)Reflexive b) Symmetric

c) Anti Symmetric d)Transitive

9.“If a R b and b R a then a=b” the relation is known as [ ]

a)Symmetric b)Anti symmetric

c)Reflexive d) Transitive

10)In node reduction optimization, when nodes of degree 3 are removed then total links are

a)Reduced 1 b)Not changed [ ]
c) Increased d) Reduced by 2

II.Fill in the blanks

11. Predicates that are defined by equality are known as _____.

12. KV charts are used to analyze _____.

13. The representation of state graph in the form of table is known as _____.

14. AB+AC= _____.

15. The bugs that occur due to dead states are known as _____.

16. Every input condition of state graph is specified in _____in state tables.

17. The translator will convert decision table into _____

18. Two kinds of matrix are _____.

19. _____of a matrix is obtained by adding all decision values and then adding 1 to it.

20. If the element of principal diagonal is '1' then the corresponding node is_____.

Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

I - Mid Examinations, MAY -2023

Year & Branch: III-CSE(A,B,C)

Subject: STM

ANSWER KEY

Descriptive Paper Key link

https://docs.google.com/document/d/1h3DCMsRDrpWFb1urrlg_DyDHnIZeewI5/edit?usp=sharing&ouid=116740267257898588224&rtpof=true&sd=true

Objective Key

I. Multiple choice questions

1.To show program has bug

2.Serious

3.Decision

4.Interpretive trace program

5.Functional testing

6.Biosis

7.Calculation part

8.Concave

9.Absorption

10.Path product

II. Fill in the blanks

11.Black box

12.Dynamic data

13.Multiway

14.Traversal

15.Transaction

16.Data flow
17.Partition testing
18.Range
19.Path sum
20.Zero

Sri Indu Institute of Engineering & Technology

Sheriguda (V), Ibrahimpatnam (M), R.R.Dist-501 510

II - Mid Examinations, JUNE -2023

Year & Branch: III-CSE(A,B,C)

Subject: STM

ANSWER KEY

Descriptive Paper Key link

https://docs.google.com/document/d/1igizFzIkWiffIQ9DvhR1pb1S0gnsyaVg/edit?usp=sharing&ouid=116740267257898588224&rtpof=true&sd=true

Objective Key

I. Choose the Correct Answers

1. Extreme point
2. Range of values
3. Condition Stub
4. Default rules
5. All of the above
6. All of the above
7. 1+0=0
8. Reflexive
9. Anti Symmetric
10. Reduced

II. Fill in the blanks

11. Equality Predicates
12. Specifications
13. State Table
14. A(B+C)
15. Transition Bugs
16. Columns
17. Source code
18. Relational matrix and Connection matrix
19. Cyclomatic complexity
20. Loop node

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Accredited by NAAC with A+ Grade, Recognized under 2(f) of UGC Act 1956
(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad)
Khalsa Ibrahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist., Telangana – 501 510
Website: https://siiet.ac.in/

Assignment Questions-I

(Assignment Questions are mapped with CO's, BT)

1.a)Write Phases in Tester's mental life. (C324.1)(Knowledge)
b) Write about taxonomy for bugs. (C324.1)(Knowledge)

2. Explain about path instrumentation. (C324.1)(Comprehension)

3. Explain the transaction flow testing with an example. (C324.2)(Comprehension)

4. Explain the basics of data flow testing and the strategies in data flow testing. (C324.2)(Comprehension)

5. Apply node reduction procedure with an suitable example. (C324.3)(Application)

Assignment Questions-II

(Assignment Questions are mapped with CO's, BT)

1 . What is a decision table ? Discuss the role of decision table in a test case design. (Comprehension) (C324.4)

2. Explain the rules of Boolean Algebra. (Comprehension)(C324.4)

3. Differentiate between good state graph and bad state graph. (Analysis)(C324.5)

4. What are principles of state testing ?Explain its advantages and disadvantages. (Knowledge)(C324.5)

5.Write an algorithm for Node Reduction algorithm. (Knowledge)(C324.6)

Result Analysis:

Course Title	SOFTWARE TESTING METHODOLOGIES
Course Code	CS615PE
Programme	B.Tech
Year & Semester	IIIyear II-semester, A sec
Regulation	R18
Course Faculty	Mrs.E.Rupa, Assistant Professor , CSE

Weak Students:

S No	Roll no	No of backlogs	Internal-I Status	Internal-II Status
1	20X31A0503	6	15	18
2	20X31A0506	4	16	19
3	20X31A0507	6	17	18
4	20X31A0508	3	22	23
5	20X31A0511	5	15	18
6	20X31A0520	4	17	20
7	20X31A0526	5	16	21
8	20X31A0527	3	17	21
9	20X31A0530	3	20	21
10	20X31A0531	5	22	24
11	20X31A0533	5	20	21
12	20X31A0540	3	16	21
13	20X31A0541	3	20	21
14	20X31A0546	3	19	22
15	20X31A0554	3	16	18
16	20X31A0556	5	16	14
17	20X31A0557	3	23	22
18	20X31A0558	6	14	17
19	20X31A0559	5	21	23

Advanced learners:

S No	Roll No	Gate Material
1	20X31A0501	Regular expressions and finite automata. Context-free grammars and push-down automata. Regular and context-free languages, pumping lemma. Turing machines and undecidability. Lexical analysis, parsing, syntax-directed translation. Runtime environments. Intermediate code generation. Local optimisation, Data flow analyses: constant propagation, liveness analysis, common subexpression elimination. ER-model, Relational model: relational algebra, tuple calculus, SQL Integrity constraints, normal forms. File organization, indexing (e.g., B and B+ trees). Transactions and concurrency control. Concept of layering: OSI and TCP/IP Protocol Stacks; Basics of packet, circuit and virtual circuit switching; Data link layer: framing, error detection, Medium Access Control, Ethernet bridging;
2	20X31A0502	
3	20X31A0504	
4	20X31A0510	
5	20X31A0512	
6	20X31A0513	
7	20X31A0514	
8	20X31A0515	
9	20X31A0516	
10	20X31A0518	
11	20X31A0519	
12	20X31A0522	
13	20X31A0523	
14	20X31A0529	
15	20X31A0534	
16	20X31A0535	
17	20X31A0537	
18	20X31A0538	
19	20X31A0539	
20	20X31A0542	
21	20X31A0544	
22	20X31A0545	
23	20X31A0549	

24	20X31A0550	System calls, processes, threads, inter-process communication, concurrency and synchronization. Deadlock, CPU and I/O scheduling. Memory management and virtual memory, File systems.
25	20X31A0551	
26	20X31A0553	
27	20X31A0556	
28	20X31A0560	
29	21X35A0501	
30	21X35A0502	

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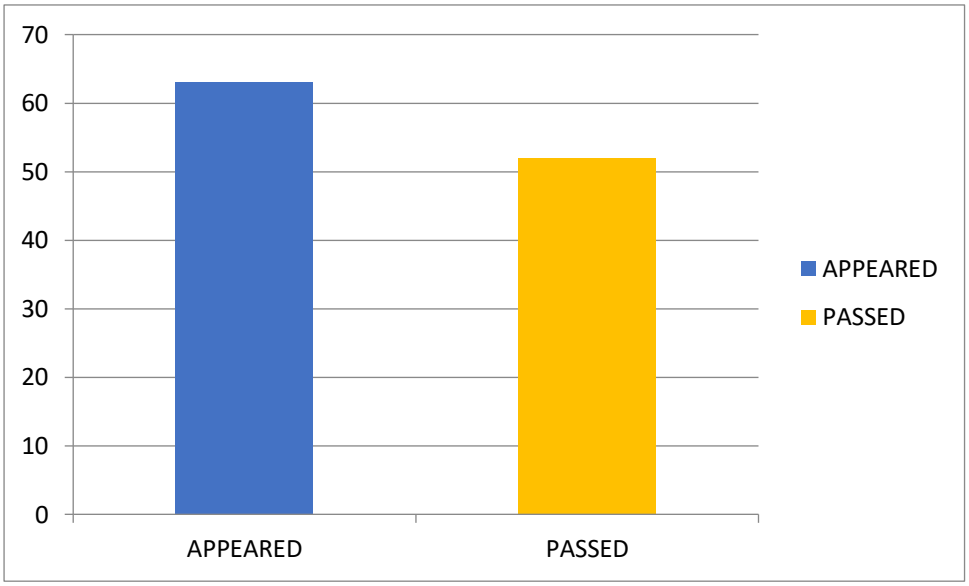
Khalsa Ibrahimpatnam, Sheriguda (V), Ibrahimpatnam (M), Ranga Reddy Dist., Telangana – 501 510
Website: https://siiet.ac.in/

BATCH CSE-III BTECH II- SEM CSE - A RESULT ANALYSIS

ACADAMIC YEAR	COURSE NAME	NUMBER OF STUDENTS		QUESTION PAPER SETTING		PASS%
		APPEARED	PASSED	INTERNAL	EXTERNAL	
2022-23	Software Testing Methodologies	63	52	COURSE FACULTY	EXTERNAL	82.53 %

Software Testing Methodologies (C324) Result Analysis



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(An Autonomous Institution under UGC)
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(Approved by AICTE, New Delhi and Affiliated to JNTUH, Hyderabad)
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Website: https://siiet.ac.in/

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

REMEDIAL CLASSES TIME TABLE

A.Y 2022-23 **SEMESTER-II**

BRANCH/ SEC	MON 4.00 PM-5.00 PM	TUE 4.00 PM-5.00 PM	WED 4.00 PM-5.00 PM	THUR 4.00 PM-5.00 PM	FRI 4.00 PM-5.00 PM
II CSE-A	DM	JAVA	DBMS	BEFA	OS
II CSE-B	BEFA	DBMS	DM	OS	JAVA
II CSE-C	DBMS	OS	BEFA	JAVA	DM
III CSE-A	CD	ML	DAA	STM	FIOT
III CSE-B	DAA	FIOT	CD	ML	STM
III CSE-C	ML	STM	FIOT	CD	DAA
IVCSE-A	OB	TQM	DS	-	-
IV CSE-B	DS	OB	TQM	-	-
IV CSE-C	TQM	DS	OB	-	-

HOD
Computer Science & Engg. Dept
SRI INDU INSTITUTE OF ENGG & TECH.
Sheriguda(V), Ibrahimpatnam(M), R.R.Dist-501 510

PRINCIPAL
PRINCIPAL
Sri Indu Institute of Engineering & Tech
Sheriguda(Vill), Ibrahimpatnam
R.R. Dist. Telangana -501 510

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment (Internal Examination-1)

Name of the faculty: **E.RUPA** Academic Year: **2022-23**

Branch & Section: **CSE- A** Examination: **I Internal**

Course Name: **SOFTWARE TESTING METHODOLOGIES** Year: **III** Semester: **II**

S.No	HT No.	Q1a	Q1b	Q1c	Q2a	Q2b	Q2C	Q3A	Q3b	Q3c	Q4a	Q4b	Q4c	Obj1	A1
Max. Marks ==>		5			5			5			5			10	5
1	20X31A0501										5			6	5
2	20X31A0502	5									5			7	5
3	20X31A0503				3									7	5
4	20X31A0504							5			4			7	5
5	20X31A0506										5			6	5
6	20X31A0507										5			7	5
7	20X31A0508							5			5			7	5
8	20X31A0509	4									5			7	5
9	20X31A0510	5									4			7	5
10	20X31A0511	2			2									6	5
11	20X31A0512							1			5			6	5
12	20X31A0513							4			4			6	5
13	20X31A0514							3			4			6	5
14	20X31A0515							4			5			6	5
15	20X31A0516	5									5			7	5
16	20X31A0517	5									5			6	5
17	20X31A0518	2									5			6	5
18	20X31A0519										5			6	5
19	20X31A0520	2									4			6	5
20	20X31A0521										5			7	5
21	20X31A0522	5									4			7	5
22	20X31A0523	5									5			7	5
23	20X31A0524	5									4			6	5
24	20X31A0525	5									5			6	5
25	20X31A0526										5			6	5
26	20X31A0527										5			7	5
27	20X31A0528				2						4			7	5
28	20X31A0529	5									5			7	5
29	20X31A0530							5			4			6	5
30	20X31A0531							5			5			7	5
31	20X31A0532	3									5			7	5
32	20X31A0533	4									5			6	5
33	20X31A0534	5									5			6	5
34	20X31A0535	5									5			7	5
35	20X31A0536	5									5			6	5
36	20X31A0537	5									5			8	5
37	20X31A0538	5									5			6	5
38	20X31A0539	5									5			7	5
39	20X31A0540										5			6	5

40	20X31A0541							4			5			6	**5**
41	20X31A0542							5			5			7	**5**
42	20X31A0543	5									5			7	**5**
43	20X31A0544	5									5			9	**5**
44	20X31A0545	5									5			8	**5**
45	20X31A0546				3						5			6	**5**
46	20X31A0547				3						5			6	**5**
47	20X31A0548				4						5			7	**5**
48	20X31A0549	5									5			7	**5**
49	20X31A0550	5									5			6	**5**
50	20X31A0551	5									5			7	**5**
51	20X31A0552	5									5			6	**5**
52	20X31A0553										5			7	**5**
53	20X31A0554										5			6	**5**
54	20X31A0555	5									5			7	**5**
55	20X31A0556										5			6	**5**
56	20X31A0557							5			5			8	**5**
57	20X31A0558	4												5	**5**
58	20X31A0559	4									5			7	**5**
59	20X31A0560	5									5			7	**5**
60	21X35A0501				1						5			6	**5**
61	21X35A0502	5						5						7	**5**
62	21X35A0503	5									5			7	**5**
63	21X35A0504										4			7	**5**
64															
65															
66															
67															
68															
69															
70															
71															
72															
73															
Target set by the faculty / HoD		2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	4.00	2.00
Number of students performed above		34	0	0	6	0	0	11	0	0	59	0	0	63	63
Number of students attempted		34	0	0	7	0	0	12	0	0	59	0	0	63	63
Percentage of students scored more than target		100%			86%			92%			100%			100%	100%

CO Mapping with Exam Questions:

CO - 1	**Y**			**Y**	**Y**								y	y
CO - 2							**Y**	**Y**					y	y

CO - 3										**Y**			y	y
CO - 4														
CO - 5														
CO - 6														

CO Attainment based on Exam Questions:

CO - 1	100%			86%									100%	100%
CO - 2							92%						100%	100%
CO - 3										100%			100%	100%
CO - 4														
CO - 5														
CO - 6														

CO	**Subj**	obj		Asgn	Overall	Level
CO-1	93%	100%		100%	98%	3.00
CO-2	92%	100%		100%	97%	3.00
CO-3	100%	100%		100%	100%	3.00
CO-4						
CO-5						
CO-6						

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal 1 Examination) = **3.00**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment (Internal Examination-2)

Name of the faculty E.RUPA | Academic Year: **2022-23**

Branch & Section: CSE- A | Examination: II Internal

Course Name: **SOFTWARE TESTING METHODOLOGIES** | Year: III | Semester: II

S.No	HT No.	Q1a	Q1b	Q1c	Q2a	Q2b	Q2c	Q3a	Q3b	Q3c	Q4a	Q4b	Q4c	Obj4	A4
Max. Marks ==>		5			5			5			5			10	5
1	20X31A0501				4						5			9	5
2	20X31A0502				5						5			9	5
3	20X31A0503				3						2			8	5
4	20X31A0504				5						5			9	5
5	20X31A0506				3						3			8	5
6	20X31A0507				3						2			8	5
7	20X31A0508				4						5			9	5
8	20X31A0509				4						3			9	5
9	20X31A0510				4						5			8	5
10	20X31A0511	2			3									8	5
11	20X31A0512	4			5									9	5
12	20X31A0513				5						5			9	5
13	20X31A0514				4						5			9	5
14	20X31A0515				5						5			9	5
15	20X31A0516				5						5			9	5
16	20X31A0517				5						5			9	5
17	20X31A0518				5						3			9	5
18	20X31A0519				3						3			9	5
19	20X31A0520	3			3									9	5
20	20X31A0521	3			4									9	5
21	20X31A0522				5						5			9	5
22	20X31A0523				5						5			10	5
23	20X31A0524				4						4			9	5
24	20X31A0525				5						5			10	5
25	20X31A0526				4						3			9	5
26	20X31A0527				4						3			9	5
27	20X31A0528				4						5			9	5
28	20X31A0529				5						5			9	5
29	20X31A0530				4						3			9	5
30	20X31A0531				5						5			9	5
31	20X31A0532				4						2			9	5
32	20X31A0533				4						3			9	5
33	20X31A0534				5						5			10	5
34	20X31A0535				5						5			10	5
35	20X31A0536				5						4			9	5
36	20X31A0537				5						5			10	5
37	20X31A0538				5						5			10	5
38	20X31A0539				5						5			9	5
39	20X31A0540	3			4									9	5
40	20X31A0541	4									3			9	5
41	20X31A0542				4			4						9	5
42	20X31A0543				5						5			9	5
43	20X31A0544				5						5			10	5

44	20X31A0545				5						5			9	**5**
45	20X31A0546				4						4			9	**5**
46	20X31A0547				5						4			9	**5**
47	20X31A0548				4						4			9	**5**
48	20X31A0549				5						4			9	**5**
49	20X31A0550				5						4			9	**5**
50	20X31A0551				5						5			9	**5**
51	20X31A0552				5						4			8	**5**
52	20X31A0553				5						4			8	**5**
53	20X31A0554	2									3			8	**5**
54	20X31A0555				5						5			8	**5**
55	20X31A0556														**5**
56	20X31A0557				4						5			8	**5**
57	20X31A0558										4			8	**5**
58	20X31A0559				5						4			9	**5**
59	20X31A0560				5						5			9	**5**
60	21X35A0501														**5**
61	21X35A0502				5						5			7	**5**
62	21X35A0503				5						4			8	**5**
63	21X35A0504				4						3			7	**5**
64															
65															
66															
67															
68															
69															
70															
71															
72															
73															
Target set by the faculty / HoD		2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	2.00	0.00	0.00	4.00	2.00
Number of students performed above the target		7	0	0	58	0	0	1	0	0	55	0	0	61	63
Number of students attempted		7	0	0	58	0	0	1	0	0	55	0	0	61	63
Percentage of students scored more than target		100%			100%			100%			100%			100%	100%

CO Mapping with Exam Questions:

CO - 1														
CO - 2														
CO - 3														
CO - 4	**Y**												y	y
CO - 5				**Y**									y	y
CO - 6							**Y**			**Y**			y	y

% Students Scored >Target %	100%			100%			100%			100%			100%	100%

CO Attainment based on Exam Questions:

CO - 1														
CO - 2														
CO - 3														
CO - 4	100%												100%	100%
CO - 5				100%									100%	100%
CO - 6							100%			100%			100%	100%

CO	Subj	obj		Asgn	Overall	Level
CO-1						
CO-2						
CO-3						
CO-4	100%	100%		100%	100%	3
CO-5	100%	100%		100%	100%	3
CO-6	100%	100%		100%	100%	3

Attainment Level	
1	40%
2	50%
3	60%

Attainment (Internal Examination-2) = **3.00**

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment (University Examinations)

Name of the faculty : E.RUPA Academic Year: **2022-23**

Branch & Section: CSE- A Year / Semester: III/II

Course Name: **SOFTWARE TESTING METHODOLOGIES**

S.No	Roll Number	Marks Secured
1	20X31A0501	29
2	20X31A0502	26
3	20X31A0503	7
4	20X31A0504	26
5	20X31A0506	28
6	20X31A0507	29
7	20X31A0508	18
8	20X31A0509	26
9	20X31A0510	29
10	20X31A0511	3
11	20X31A0512	28
12	20X31A0513	31
13	20X31A0514	37
14	20X31A0515	34
15	20X31A0516	35
16	20X31A0517	29
17	20X31A0518	31
18	20X31A0519	32
19	20X31A0520	29
20	20X31A0521	34
21	20X31A0522	26
22	20X31A0523	38
23	20X31A0524	17
24	20X31A0525	38
25	20X31A0526	2
26	20X31A0527	31
27	20X31A0528	30
28	20X31A0529	26
29	20X31A0530	19
30	20X31A0531	19
31	20X31A0532	16
32	20X31A0533	14
33	20X31A0534	26
34	20X31A0535	30
35	20X31A0536	37
Max Marks		75

S.No	Roll Number	Marks Secured
36	20X31A0537	38
37	20X31A0538	26
38	20X31A0539	26
39	20X31A0540	42
40	20X31A0541	47
41	20X31A0542	26
42	20X31A0543	56
43	20X31A0544	26
44	20X31A0545	26
45	20X31A0546	40
46	20X31A0547	33
47	20X31A0548	30
48	20X31A0549	26
49	20X31A0550	39
50	20X31A0551	43
51	20X31A0552	38
52	20X31A0553	27
53	20X31A0554	26
54	20X31A0555	41
55	20X31A0556	3
56	20X31A0557	32
57	20X31A0558	3
58	20X31A0559	26
59	20X31A0560	38
60	21X35A0501	
61	21X35A0502	26
62	21X35A0503	26
63	21X35A0504	30
64		
65		
66		
67		
68		
69		
70		

Class Average mark	28
Number of students performed above the target	32
Number of successful students	62

Attainment Level	% students
1	40%
2	50%

Percentage of students scored more than target	52%
Attainment level	**2**

3	60%

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course Outcome Attainment

Name of the faculty E.RUPA
Academic Year 2022-23
Branch & Section: CSE- A
Examination: I Internal

Course Name: **SOFTWARE TESTING METHODOLOGIES**
Year: III
Semester: II

Course Outcomes	1st Internal Exam	2nd Internal Exam	Internal Exam	University Exam	Attainment Level
CO1	3.00		3.00	2.00	2.25
CO2	3.00		3.00	2.00	2.25
CO3	3.00		3.00	2.00	2.25
CO4		3.00	3.00	2.00	2.25
CO5		3.00	3.00	2.00	2.25
CO6		3.00	3.00	2.00	2.25
Internal & University Attainment:			3.00	2.00	
Weightage			25%	75%	
CO Attainment for the course (Internal, University)			0.75	1.50	
CO Attainment for the course (Direct Method)			2.25		

Overall course attainment level **2.25**

SRI INDU INSTITUTE OF ENGINEERING & TECHNOLO(

Department of Computer Science and Engineering

Program Outcome Attainment (from Course)

Name of Faculty: E.RUPA Academic Year: 2022-23

Branch & Section: CSE- A Year: III

Course Name: **SOFTWARE TESTING METHODOLOGIES** Semester: II

CO-PO mapping

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	1	2	-	2	-	-	-	-	2	-	-	1	-
CO2	3	1	2	-	2	-	-	-	-	2	-	-	2	-
CO3	2	2	1	-	-	-	-	-	-	-	-	-	1	2
CO4	3	2	1	-	-	-	-	-	-	-	-	-	-	2
CO5	2	2	1	-	2	-	-	-	-	-	-	-	-	-
CO6	3	2	2	-	1	-	-	-	-	2	-	-	-	-
Course	2.6	1.6	1.5		1.8					2			1.3	2

CO	**Course Outcome Attainment**
CO1	2.25
CO2	2.25
CO3	2.25
CO4	2.25
CO5	2.25
CO6	2.25
Overall course attainment level	**2.25**

PO-ATTAINMENT

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO Attainment	**1.95**	**1.20**	**1.13**		**1.31**					**1.50**		

CO contribution to PO - 33%, 67%, 100% (Level 1/2/3)

SRI INDU INSTITUTE OF ENGINEERING AND TECHNOLOGY

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Website: https://siiet.ac.in/

ASSIGNMENTS AND REGISTER

Assignment-1 Script Link:

https://drive.google.com/file/d/16MUGI30_3noMiLvC3dbfHtLcS3R6o3LC/view?usp=sharing

Assignment-2 Script Link:

https://drive.google.com/file/d/1vldbp8_LJyP6UTJ8BJXFqJnXLZ2q6EdE/view?usp=sharing

Attendance Register Link:

https://drive.google.com/file/d/1H1fmXfFLSNTPn_Vi6inm3Imk4V3Hyer_/view?usp=sharing