O.P.Code: 23CS0535	R23	H.T.No.									

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech. III Year II Semester Regular Examinations April-2026

SOFTWARE TESTING METHODOLOGIES

(CSE (Artificial Intelligence and Data Science)

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

PART-A

(Answer all the Questions **10 x 2 = 20** Marks)

1	a	What is Path Testing?	CO1	L1	2M
	b	Write short notes on Path instrumentation.	CO1	L1	2M
	c	What is a Definition–Use (DU) pair in Data Flow Testing?	CO2	L2	2M
	d	What is a Transaction Flow Graph? Mention its components	CO2	L1	2M
	e	Write short notes on Domain dimensionality.	CO3	L1	2M
	f	Differentiate between Nice Domains and Ugly Domains.	CO3	L2	2M
	g	What is Flow Anomaly Detection?	CO4	L1	2M
	h	What are K–Map (Karnaugh Map) Charts? How are they used in testing?	CO4	L2	2M
	i	What is a State Graph? Mention its basic components.	CO5	L1	2M
	j	What is a Graph Matrix?	CO5	L1	2M

PART-B

(Answer all Five Units **5 x 10 = 50** Marks)

UNIT-I

2	a	State and explain the consequences of bugs.	CO1	L2	5M
	b	Describe the concept of path sensitization and path instrumentation.	CO1	L2	5M
		OR			
3		Describe the various testing levels and explain the model of testing.	CO1	L2	10M

UNIT-II

4	a	What is transaction? Write about mitosis& mitosis.	CO2	L2	5M
	b	What are the elements of flow graphs & Explain it.	CO2	L2	5M
		OR			
5		Explain the various strategies of data flow testing.	CO2	L4	10M

UNIT-III

6	a	Explain in detail about Domain testing strategy.	CO3	L4	5M
	b	What is flow anomaly detection, discuss with an example.	CO3	L3	5M
		OR			
7		Write short notes about systematic boundaries.	CO3	L4	10M

UNIT-IV

8	a	Explain the usage of regular expression in flow anomaly detection.	CO4	L3	5M
	b	Write short notes on Path Products & Path expressions.	CO4	L2	5M
		OR			
9		Write down the steps for Reduction procedure and solve it with an example.	CO4	L3	10M

UNIT-V

10	a	Describe the concept of Good & Bad State Graphs.	CO5	L4	5M
	b	Write short notes on the following: i. State Graphs ii. State table	CO5	L4	5M
		OR			
11		Explain the concept of graph matrices and applications.	CO5	L3	10M

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