9635 – STELLA MARY'S COLLEGE OF ENGINEERING

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

II Year / IV Semester

CS3452-Theory of Computation

Name: **Roll No** **Section:**

SI.No	Topics (Prepare the problems relevant)	Marks	Signature
	Unit -I		
1	Inductive Proof		
2	NFA to DFA		
3	NFA with ϵ and without ϵ moves		
4	Minimization of DFA		
5	Design a NFA and DFA		
	Unit -II		
1	RE to NFA		
2	DFA to RE		
3	Closure properties of RL		
4	Pumping Lemma		
	Unit -III		
1	Derivation, Derivation tree, ambiguity		
2	CFG to PDA		
3	PDA to CFG		
4	Deterministic PDA		
5	CFL to PDA		
	Unit -IV		
1	Chomsky Normal Form		
2	Greibach Normal Form		
3	Closure properties of CFL		
4	Programming techniques for turing machine		
5	Proper Subtraction		
	Unit -V		
1	Recursive and Recursively enumerable language		
2	Post correspondence problem		
3	Tractable and Intractable problems		
4	P and NP completeness		
5	Kruskal's algorithm, Travelling Salesman Problem, 3-CNF SAT problems.		
	To be Submitted	**Verified**	**Signature**
1	Study Materials (Unit 1 to 5)		
2	Two marks with answers		
3	Assignment 1		
4	Assignment 2		
5	Assignment 3		
6	Assignment 4		
7	Assignment 5		
8	Project		
9	Univ. Q1		
10	Univ. Q2		

SI.No	Topics	Marks	Signature
	Unit -I		
1	Define Automata with two examples		
2	Difference between NFA and DFA		
3	What is Principle of mathematical induction		
4	What is the language described by NFA and DFA		
5	Extended transition function for NFA, DFA and ϵ NFA		
6	DFA for a language		
7	Define ϵ closure		
	Unit -II		
1	Mention closure properties of regular language		
2	Verify a language is regular		
3	DFA for RE		
4	State pumping lemma and its advantage		
5	Show that complement of a RL is regular		
6	Regular expression foe a string		
7	NFA for Regular expression		
	Unit -III		
1	Define the language generated by PDA		
2	Define left most and right most derivation with examples		
3	Define ambiguous		
4	Check whether a language is CFL or not		
5	Define deterministic PDA		
6	Define instantaneous description of PDA		
7	Define CFG, PDA		
	Unit -IV		
1	Define turning machine		
2	State pumping lemma for CFL		
3	Difference between multi-tape and multi-track TM		
4	Define Chomsky normal form		
5	Define Greibach Normal form		
6	What is useless symbols		
7	Define instantaneous description of TM		
	Unit -V		
1	Define Lu and Ld		
2	Difference between recursive and recursively enumerable language		
3	What is halting problem		
4	Define PCP		
5	Define P and NP		
6	Difference between decidable and undecidable problems		
7	What is a RE language		