SAHYADRI
COLLEGE OF ENGINEERING & MANAGEMENT
An Autonomous Institution
MANGALURU

Department of Information Science & Engineering

Assignment II - ODD Semester 2023 - 24

Course Title : Automata Theory and Computability		Course Code: 21CS53
Sem / Section: V 'A' & 'B'	Faculty: Dr. R Pakkala	Max. Marks: 50
Date of Announcement: 16/02/2024	Date of Submission: 04/03/2024	

Note:

- **Answer All the Five Questions**
- **The Assignment document must contain**
  - **Cover Page**
  - **Problem Statement**
  - **Implementation**
  - **Screenshots**

Q. No.	Questions	Marks	Blooms Level	CO No.
1	Develop a real time application to demonstrate the application of regular expressions.	20	CL3	CO2

Cognitive Levels of Bloom's Taxonomy

No.	CL1	CL2	CL3	CL4	CL5	CL6
Level	Remember	Understand	Apply	Analyze	Evaluate	Create

Course Outcomes

CO1	Make use of central concepts of automata theory to solve the finite automata for different formal languages and identify the equivalence between different models of finite automata.	CL3
CO2	Build the regular expression for a given formal language and identify the equivalence between finite automata and regular expressions. Also, explore the properties of regular languages.	CL3
CO3	Construct the context-free grammar and pushdown automata for the different formal languages and also, identify the equivalence between pushdown automata and context-free grammar.	CL3
CO4	Show the properties of context-free languages by simplifying the context-free grammar and build the turing machine for the given formal language.	CL3
CO5	Outline the concepts of turing machine variants and identify the decidability and intractability of computational problems.	CL3

Assessment Method		
Sl. No.	**Assessment Component**	**Marks Allotted**
1.	Problem Statement	5
2.	Implementation	10
3.	Screenshots of Execution	5