MANIPAL INSTITUTE OF TECHNOLOGY
BENGALURU
(A constituent unit of MAHE, Manipal)

Assignment

IV SEMESTER (CSE A/CSE-AI (B)) Jan-May 2024
FORMAL LANGUAGES AND AUTOMATA THEORY (CSE_2254/IT_2251)

Max Marks: 10 **Submission Due Date: 17/04/2024**

Student Name	
Reg No./Section	
Student Signature	

Answer all the questions.

S. No	Question	Marks
Q1	Convert the given grammar to (i) CNF (Chomsky Normal Form) : S→ASB | a, A → aAS | λ, B →SbS | A | bb | λ (ii) GNF (Greibach Normal Form): S →AB | aB, A→ aab | λ, B→bbA	2+2
Q2	For a given grammar, G, with production rules S→aSS, S→b. Identify and prove that it is ambiguous or not.	4
Q3	For the given language, L={$1^n 01^n 0$/ n>= 1}. Construct the grammar, Push Down Automata with transitions for the strings 110110.	2

Instructions to submit assignment.

1. *Answer all the questions.*
2. *Handwritten answers should be uploaded to the teams after converting it into a single PDF file.*
3. *Hard copy will not be accepted (Should be submitted only through the MS teams)*
4. *Students signature and date should be there on each sheet.*
5. *Zero marks will be awarded in case someone else's answer sheet is uploaded.*
6. *Please refer the video lecture link provided below for solving problems*

Theory of Automata, Formal Languages and Computation Theory of Automata, Formal Languages and Computation by Prof.Kamala Krithivasan, Department of Computer Science and Engineering, IIT Madras. https://www.youtube.com/playlist?list=PL85CF9F4A047C7BF7