Department of Computer Engineering

Academic Year: 2022-23(EVEN)

TUTORIAL NO:4

Subject : TCS **Semester: I**V

Course Outcome	CO3		
Question No.	1 a	1b	Total
Marks Obtained			
Marks Allotted	10	10	20

Name:

Batch:

Roll No. :

Signature of Faculty:

DY PATIL DEEMED TO BE UNIVERSITY — RAMRAO ADIK — INSTITUTE OF TECHNOLOGY NAVI MUMBAI	**Department of Computer Engineering** **Academic Year: 2022-23** **(EVEN)**

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1.	a	Obtain leftmost derivation, rightmost derivation & derivation tree for the string **"ababab".** The grammar is : S → aSbS | bSaS | ε Also check whether the grammar is ambiguous or not	CO3	BT4	10M
1.	b	Consider the following Grammar G=(V,T,P,S), V={A,B}, T={a, b}, Start Symbol: A and productions P are: S → AB A →aA | bB |b B →b Convert this grammar in Greibach Normal Form (GNF)	CO3	BT3	10M

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Course Outcomes (CO) Students will be able to:

CO1: Identify the central concepts in theory of computation and differentiate between deterministic and nondeterministic automata, also obtain equivalence of NFA and DFA.
CO2: Infer the equivalence of languages described by finite automata and regular expressions.
CO3: Devise regular, context free grammars while recognizing the strings and tokens.
CO4: Design pushdown automata to recognize the language.
CO5: Develop an understanding of computation through Turing Machine.
CO6: Acquire fundamental understanding of decidability and undecidability.

Bloom's Taxonomy

BT1- Remember, BT2- Understand, BT3- Apply, BT4- Analyze, BT5- Evaluate, BT6- Create

Subject Incharge **DQA Member** **HOD**