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Term End Examinations – Dec 2024

Programme	:	B.Tech.	Semester	:	Interim Semester 2024-
Course Name/ Course Code	:	Theory Of Computation and Compiler Design/ CSE2004	Slot	:	A14+D11+D12
Time	:	1½ hours	Max. Marks	:	50

Answer ALL the Questions

Q. No.	Question Description	Mar

PART - A (30 Marks)

1 (a) Construct minimal DFA, which accept the set of all sting over the $\sum=\{a,b\}*$ such that   10
(I) contains the sub string bb but not bbb.

(II) first two and last two symbols are not same.

OR

(b) Write a CFG and create a PDA for the following language: 10
$L=\{a^n b^m \mid 2n \leq m \leq 3n\}$

2 (a) Consider the following grammar.   10
S-> Aa | bAc | Bc | bBa
A->d
B->d
Generate the SLR parsing table for given grammar.

OR

(b) Design a Turing machine that accepts the language   10
$L= \{wvw: w,v \in \{a,b\}^+ |v|=2\}$.

3 (a) Explain Halting Problem in Turing Machine with suitable example. Also design a Turing   10
Machine for following function:
$f(m) = \{ m-2,$ if $m>2$
1 , othewise$\}$

OR

(b) Translate the expression $[-(a+b)*(c+d)+(a+b+c)]$ into   10
I. Quadruples
II. Triples
III. Indirect Triples

PART - B (20 Marks)

4   Find the regular expression for given DFA.   10

5   Construct the DAG for -   10
        X= Y * Z
        W= P + Y
        Y = Y * Z
        P = W - X

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