R20 Regulation *Subject code:3P5ED*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech V Semester Supplementary Examinations, December 2024

COMPILER DESIGN

(CSE)

Maximum Marks: 70 Date:03.01.2025 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A		
All the following questions carry equal marks (10X2M=20) Marks)		CO	Bloom Tx
1	Define Compiler.	1	L1
2	Differentiate analysis and synthesis phase.	1	L1
3	What is the role of parser and give its classification	2	L1
4	How can we collect Canonical collection of Items?	2	L1
5	What is meant by type checking	3	L1
6	Define L attributed definition with an example	3	L1
7	Define Loop Optimization.	4	L1
8	Define Code Motion.	4	L1
9	What do you know about Live Variable Analysis?	5	L1
10	What is DAG representation?	5	L1
	Part-B		
Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	Discuss about the input buffering scheme in lexical analyzer. [10M]	1	L2
	OR		
12	Write a short notes on compiler phases. [10M]	1	L2
13	Check whether the grammer is LALR(1) but not SLR(1) [10M] S-->Aa/bAc/dc/bda A-->d	2	L2
	OR		
14	Explain the model of Table-driven predictive parsing and illustrate with an example. [10M]	2	L2
15	Explain in detail about the various storage allocation schemes. [10M]	3	L2
	Or		
16	Explain the construction of Syntax tree using SDT. [10M]	3	L2
17	What is the various primary structure-Preserving transformations on basic blocks? Explain each of them in detail. [10M]	4	L2

	OR		
18	A flow graph is useful for understanding code generation algorithm? Justify Your answer with an example. [10M]	4	L2
19	A) Explain common subexpression elimination with examples. [5M] B) Explain dead code elimination with an example. [5M]	5	L2
	OR		
20	Write and explain the algorithm for live variable analysis. [10M]	5	L2