R20 Regulation *Subject code:3P5ED*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, May 2025

COMPILER DESIGN

(CSE)

Maximum Marks: 70 Date: 24.06.2025 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.
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)		Marks	CO	BTL
1	Define Compiler and draw the diagram for phases of compilation.\	2M	1	L1
2	Differentiate analysis and synthesis phase.	2M	1	L1
3	What is the role of parser and give its classification	2M	2	L1
4	How can we collect Canonical collection of Items?	2M	2	L1
5	What is meant by type checking	2M	3	L1
6	Define L attributed definition with an example	2M	3	L1
7	Define Loop Optimization.	2M	4	L1
8	Define Code Motion.	2M	4	L1
9	Describe peep hole optimization.	2M	5	L1
10	What is DAG representation?	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Discuss about the input buffering scheme in lexical analyzer.	10M	1	L2
	OR			
12	Write a short notes on compiler construction tools?	10M	1	L2
13	Explain about operator precedence parsing algorithm.	10M	2	L2
	OR			
14	Explain the model of Table driven predictive parsing and illustrate with an example.	10M	2	L2
15	Explain SDD of a simple desk calculator.	10M	3	L2
	OR			
16	Describe annotated parse tree and construct annotated parse tree for the input string 4*5-6n.	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	Explain reducible and non-reducible flow graphs with an example.	10M	4	L2
19	Describe various Register allocation optimization techniques with an example.	10M	5	L2
	OR			
20	Construct a DAG for the following program code: i. x=y*z ii. w=p+y iii.y=y*z iv. p=w-x	10M	5	L2