R20 Regulation *Subject code: 3P5ED*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, November 2025

COMPILER DESIGN

(CSE)

Maximum Marks: 70 Date: 10.11.2025 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	What is an ambiguous grammar and give a suitable example for it	2M	2	L1
5	What is the difference between annotated parse tree and dependency graph.	2M	3	L1
6	Define L attributed definition with an example	2M	3	L1
7	Write about instruction ordering in the generation of target code	2M	4	L1
8	What are the different representations of intermediate code	2M	4	L1
9	What is constant propagation	2M	5	L1
10	Define a) Dominators b) back edges	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Discuss the various phases of compiler and trace the program segment c=a+b-4 for all phases.	10M	1	L2
	OR			
12	Give the minimized DFA for the following expression (a/b)*abb.	10M	1	L2
13	Check whether the grammer is LALR(1) but not SLR(1) S-->Aa/bAc/dc/bda A-->d	10M	2	L2
	OR			
14	a) Explain the computation of First and Follow sets with an example. b) Explain left factoring with an example.	5M 5M	2	L2
15	Explain S attributed translation with an example.	10M	3	L2
	OR			
16	Differentiate between annotated parse tree and dependency graph with an example.	10M	3	L2

17	a) Explain the subdivision of run time memory. b) Differentiate static and dynamic storage allocation.	6M 4M	4	L2
	OR			
18	Explain the target language in detail.	10M	4	L2
19	a) Explain loop optimization techniques. b) i) Define code motion ii) Basic block iii) Flow graph	7M 3M	5	L2
	OR			
20	Explain data flow schema: Reaching definition and write its algorithm.	10M	5	L2