R18 Regulation *Subject code:2P6EA*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, April 2026

COMPILER DESIGN

(CSE)

Maximum Marks: 70 Date: 18.04.2026 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	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	Give any two applications of syntax directed translation.	2M	3	L1
7	How the cost of an instruction is computed?	2M	4	L1
8	Write about garbage collection and give examples for the languages that support garbage collection.	2M	4	L1
9	What is meant by code optimization and list types of code optimization?	2M	5	L1
10	What is the function preserving transformations?	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	Explain the compiler construction tools with example.	10M	1	L2
13	Construct SLR(1) for the following grammar E-->E+T/T T-->TF/F F-->F*/a/b. Show the acceptance for the string w=a+b*a	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	Describe annotated parse tree and construct annotated parse tree for the input string 4*5-6n	10M	3	L2
17	Explain quick sort with the help of activation tree.	10M	4	L2

	OR			
18	a) Write the algorithm for partitioning three address statements into basic blocks. b) Explain the representation of flow graphs.	5M 5M	4	L2
19	a) Explain common subexpression elimination with examples. b) Explain dead code elimination with an example.	5M 5M	5	L2
	OR			
20	Write and explain the algorithm for live variable analysis.	10M	5	L2