R20 Regulation *Subject code: 3P5FC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, November 2025

COMPILER DESIGN

(IT)

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 Interpreter.	2M	1	L1
2	Define the following terms a) Lexeme b) Token.	2M	1	L1
3	Explain the LR parsers.	2M	2	L1
4	Define left most derivation.	2M	2	L1
5	What are the applications of Syntax Directed Translation?	2M	3	L1
6	Define back patching with a example.	2M	3	L1
7	List the applications of DAG.	2M	4	L1
8	Define Peephole Optimization.	2M	4	L1
9	Write about code motion.	2M	5	L1
10	What are the types in loops of flow graphs?	2M	5	L1
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	a) Explain science in building compiler. b) Write the specification and recognition of tokens.	5M 5M	1	L2
	OR			
12	Explain the various phases of compiler and trace the program segment c=a+b*4 for all phases. Write down the phases in detail.	10M	1	L2
13	Check whether the following grammar is SLR or not. Explain your answer with Reasons. S→ L*R S→R R→L L→*R L→id	10M	2	L2
	OR			
14	a) Differentiate between top down and bottom up parsing techniques. b) Explain about Parser Generators.	5M 5M	2	L2

15	a) Write a note on the specification on simple type checker. b) List the various ways of calling the procedures? Explain in detail.	6M 4M	3	L2
	OR			
16	Construct a quadruple, triples ,indirect triples for the expression: a:= b * -c + b* -c	10M	3	L2
17	Explain the various issues in the design of code generation.	10M	4	L2
	OR			
18	What is an activation record? Explain how it is related with run time storage?	10M	4	L2
19	Illustrate loop optimization with suitable example.	10M	5	L2
	OR			
20	Write global common sub expression elimination algorithm with an example?	10M	5	L2