R18 Regulation *Subject code:2P6FC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech VI Semester Supplementary Examinations, May 2025

COMPILER DESIGN

(IT)

Maximum Marks: 70 Date: 20.06.2025 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	What is input buffering?	2M	1	L1
2	Differentiate compiler and interpreter.	2M	1	L1
3	What is the main idea of Left factoring?	2M	2	L1
4	Define Preprocessor.	2M	2	L1
5	Define right most derivation.	2M	3	L1
6	Examine the usage of syntax directed definition.	2M	3	L1
7	What is a DAG? Mention its applications.	2M	4	L1
8	What is meant by register descriptor and address descriptor?	2M	4	L1
9	What is induction variable elimination?	2M	5	L1
10	Write about flow graph?	2M	5	L1
	Part-B			
Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	Explain various phases of compiler with an example.	10M	1	L2
	OR			
12	Solve the given regular expression into NFA using Thompson construction i)(a/b)* abb (a/b)* ii)ab*/ab	5M 5M	1	L2
13	a) Describe on detail about the various types of parser. b) Discuss about the context-free grammar.	5M 5M	2	L2
	OR			
14	Check whether the following grammar is SLR(1) or not. Explain your answer the reasons. S -> L+R S -> R L -> *R R -> L	10M	2	L2
15	Explain about Type checking and Type Conversion with examples.	10M	3	L2
	OR			
16	What is Type conversion? What are the two types of conversion? Formulate the rules for the type conversion.	10M	3	L2

17	Discuss about the following a) Copy Propagation b) Dead Code Elimination c) Code Motion	10M	4	L2
	OR			
18	Demonstrate optimization of Basic Blocks with an example.	10M	4	L2
19	Explain the data-flow schemas on basic blocks with flow graphs.	10M	5	L2
	OR			
20	a) Explain brief about the issues in the design of code generator. b) Explain in detail about peep hole optimization.	10M	5	L2