R20 Regulation *Subject code: 3P5HD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, November 2025

COMPILER DESIGN

(CSE(DS))

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 regular set.	2M	1	L1
2	Define cross compiler.	2M	1	L1
3	What are kernel & non-kernel items?	2M	2	L1
4	Define LR(0) items.	2M	2	L1
5	What is postfix notation?	2M	3	L1
6	Define translation scheme.	2M	3	L1
7	What is dynamic scoping?	2M	4	L1
8	Define DAG.	2M	4	L1
9	What do you mean by inner loops?	2M	5	L1
10	Define constant folding.	2M	5	L1

Part-B

	Answer All the following questions. (5X10M=50Marks)	Marks	CO	BTL
11	What are the different phases of compiler? Explain the phases in detail.	10M	1	L2
	OR			
12	What is the role of transition diagrams in the construction of lexical analyzer?	10M	1	L2
13	Consider the grammar. **E → E + T ,E → T ,T → T * F, T → F, F → (E) / id** Construct CLR parsing table for the above grammar. Give the moves of the CLR parser on **id * id + id.**	10M	2	L2
	OR			
14	a) Differentiate between SLR, LALR and CLR parsers. b) Construct SLR Parsing table for the grammar. **S→ (L)|a** **L→L,s|s**	5M 5M	2	L2
15	What is a three-address code? Mention its types. How would you implement the three address statements? Explain with examples.	10M	3	L2
	OR			

16	Write quadruples, triples and indirect triples for the expression: - **(a*b)+(c+d)-(a+b+c+d).**	10M	3	L2
17	What is Activation Record? Explain its usage in stack allocation strategy. How it is different from heap allocation.	10M	4	L2
	OR			
18	Explain in detail about the Symbol code generator give one example.	10M	4	L2
19	Explain in brief about different Principal sources of optimization techniques with suitable examples.	10M	5	L2
	OR			
20	What is a Flow Graph? Explain how a given program can be converted in to a Flow graph.	10M	5	L2