R20 Regulation *Subject code: 3P5HD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, April 2026

COMPILER DESIGN

(CSE(DS))

Maximum Marks: 70 Date: 22.04.2026 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	Define compiler.	2M	1	L1
2	What is meant by semantic analysis?	2M	1	L1
3	Define parser.	2M	2	L1
4	Define left factoring.	2M	2	L1
5	Define a syntax-directed translation.	2M	3	L1
6	What is called an abstract or syntax tree?	2M	3	L1
7	Define code generations.	2M	4	L1
8	Give short note about call-by-name?	2M	4	L1
9	What is code motion?	2M	5	L1
10	Define local optimization.	2M	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		Marks	CO	BTL
11	How to design the compiler by using the source program position:=intial+rate*60.	10M	1	L2
	OR			
12	Explain in detail about the Input buffering.	10M	1	L2
13	Check whether the following grammar is a LL(1) grammar. **S-> iEtS | iEtSeS |a E-> b** Also define the FIRST and FOLLOW procedures.	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	a) Explain in detail about syntax directed definition with give one examples. b) Explain in detail about Back patching.	5M 5M	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	Consider the following program code: Prod=0; I=1; Do{ Prod=prod+a[i]*b[i]; I=i+1; }while (i<=10); a. Partition in into blocks. b. Construct the flow graph.	10M	4	L2
19	Explain in detail about flow loop optimization technique with example.	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