



R20 Regulation

Subject code:3P5FC

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, December 2024

COMPILER DESIGN

(IT)

Maximum Marks: 70

Date:03.01.2025

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 which carries 10M.
 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)		CO	Bloom Tx
1	Write the phases of compiler?	1	L1
2	List the differences between token, pattern and lexeme.	1	L1
3	What is Bottom-up parsing method?	2	L1
4	Define operator precedence grammar.	2	L1
5	Write the quadruple for the following expression: $(x + y) * (y + z) + (x + y + z)$.	3	L1
6	State intermediate code for switch statements.	3	L1
7	Give the applications of DAG.	4	L1
8	Define Peephole Optimization	4	L1
9	Define constant propagation.	5	L1
10	Define dead code elimination with example.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	Explain the various phases of a compiler in detail with an illustrative example [10M]	1	L2
OR			
12	Define Regular expression. Explain the properties of Regular expressions. [10M]	1	L2
13	Construct SLR parsing table for given grammar: [10M] $S \rightarrow AS b$ $A \rightarrow SA a$	2	L2
OR			
14	A) Differentiate between top down and bottom up parsing techniques... [5M] B) Explain about Parser Generators [5M]	2	L2
15	A) What is attributed grammar? Define and explain the synthesized and inherited attributes. [6M] B) Differentiate Synthesized and inherited attributes. [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 issue and the difference between the heap allocated activation records versus stack allocated activation records [10M]	4	L2
	OR		
18	Define a Directed Acyclic graph. Construct a DAG and write the sequence of Instructions for the expression $Z = X - Y + X * Y * U - V / W + X + V$ [10M]	4	L2
19	Explain the principal sources of optimization. [10M]	5	L2
	OR		
20	Explain about data flow analysis. [10M]	5	L2