



R20 Regulation

Subject code:3P5HD

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, December 2024

COMPILER DESIGN (CSE (DS))

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	Define compiler.	1	L1
2	What is meant by semantic analysis?	1	L1
3	Define parser.	2	L1
4	What is meant by viable prefixes?	2	L1
5	Define back patching.	3	L1
6	Construct Three address code for the following position := initial + rate * 60	3	L1
7	What is a flow graph?	4	L1
8	Define static allocations.	4	L1
9	What is meant by Dead Code?	5	L1
10	Define constant folding	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	Convert the RE (a b)* abb into NFA with ϵ and find the equivalent minimum state DFA. [10M]	1	L2
OR			
12	What is the role of transition diagrams in the construction of lexical analyzer? [10M]	1	L2
13	A) Consider the grammar: $E \rightarrow E+E$, $E \rightarrow E^*E$, $E \rightarrow id$ Perform shift reduce parsing of the input string "id1+id2+id3" [5M] B) Write the differences between SLR, CLR, LALR parsers. [5M]	2	L2
OR			
14	Write an algorithm for constructing CLR parsing table Following Grammar $S \rightarrow CC$, $C \rightarrow aC$, $C \rightarrow d$ [10M]	2	L2

15	A) Define syntax tree with give an example. [5M] B) Explain the Translation scheme of SDD give an example. [5M]	3	L2
	OR		
16	A) Define intermediate code? Translate the expression $(a*b)+(c+d)-(a+b)$ into quadruples, triples and indirect triples. [5M] B) Explain in detail about Flow of control statements. Give one example. [5M]	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	Define Symbol table? Explain about the data structures used for Symbol table. [10M]	4	L2
19	What are loop invariant Computations? Explain how they affect the efficiency of a program. [10M]	5	L2
	OR		
20	Explain the machine independent optimization techniques. [10M]	5	L2