Regulation R17 *Subject code:* 1P6FA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech III Year II Semester Supplementary Examinations, January 2023

COMPILER DESIGN

(IT)

Maximum Marks: 70 07-01-2023 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)

1 Write a brief note on bootstrap process
2 What is Context free grammar?
3 Define augmented grammar
4 Compare the LR Parsers.
5 Define Type Equivalence
6 Explain the role of intermediate code generator in compilation process
7 What are the various object code forms?
8 Define address descriptor and register descriptor
9 What are induction variables? What is induction variable elimination?
10 Explain about code motion.

Part-B

Answer All the following questions. (10M X 5=50Marks)

11 Explain the various phases of a compiler with an illustrative example 10M

OR

12 Discuss in detail about role of lexical Analyzer in compiler 10M

13 Check whether the following grammar is SLR (1) or not. Explain your answer with Reasons. 10M

S→ L=R S→R L→*R L→id R→L

OR

14 Construct a Predictive parsing table for the Grammar 10M

E->E+T/T
T->T*F/F
F->(E)/id

15 Translate the expression (a+b)*(c+d)+(a+b+c) in to quadruple, and triple 10M

OR

16 Explain the issue and the difference between the heap allocated activation records versus stack allocated activation records. 10M

17	Write the principal sources of optimization	10M
	OR	
18	Explain Lazy-code motion problem with an algorithm	10M
19	Explain data-flow schemas on basic blocks with flow graphs	10M
	OR	
20	Explain how data flow equations are set up and solved for improving code.	10M