MARRI LAXMAN REDDY
INSTITUTE OF TECHNOLOGY AND MANAGEMENT
(AN AUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad)
Accredited by NBA and NAAC with 'A' Grade & Recognized Under Section2(f) & 12(B)of the UGC act,1956

III B.Tech II Sem Regular End Examination, June 2022
Compiler Design
(Computer Science and Engineering)

Time: 3 Hours.   Max. Marks: 70

Note: 1. Question paper consists: Part-A and Part-B.
2. In Part – A, answer all questions which carries 20 marks.
3. In Part – B, answer any one question from each unit.
   Each question carries 10 marks and may have a, b as sub questions.

PART- A
(10*2 Marks = 20 Marks)

1. a)	Define Boot strapping.	2M	CO1	BL1
b)	What are the data structures in compilation?	2M	CO1	BL1
c)	Define LL(1) Grammar.	2M	CO2	BL1
d)	What are the pre-processing steps required for predictive parsing?	2M	CO2	BL1
e)	Define Syntax tree.	2M	CO3	BL1
f)	Write in brief about equivalence of type expressions.	2M	CO3	BL1
g)	Define Heap.	2M	CO4	BL1
h)	Why do we need back patching?	2M	CO4	BL1
i)	What is redundant sub expression elimination?	2M	CO5	BL1
j)	Define Basic block.	2M	CO5	BL1

PART- B
(10*5 Marks = 50 Marks)

2 a)	Define Compiler. Explain in brief about the types of lexical errors with example.	5M	CO1	BL4
b)	Differentiate between compiler and interpreter.	5M	CO1	BL2

OR

3	What is LEX? Explain in brief about the different sections of LEX Program.	10M	CO1	BL4

4 a)	Construct CLR Parsing table for the grammar S$\rightarrow$L=R/R, L$\rightarrow$*R/id, R$\rightarrow$L	5M	CO2	BL6
b)	Differentiate between Top down and bottom up parsing techniques.	5M	CO2	BL2

OR

5	Construct SLR Parsing table for the grammar S$\rightarrow$CC, C$\rightarrow$cC/d.	10M	CO2	BL6

6	a)	Define Semantic analysis. Write in brief about Syntax directed definition.	5M	CO3	BL1
	b)	Define Three address code. Discuss in brief about different types of three address codes.	5M	CO3	BL2

OR

7		Construct an annotated parse tree for 3*4+5	10M	CO3	BL6

8	a)	Define Symbol table. Explain about the data structures used for Symbol table?	5M	CO4	BL4
	b)	Translate the expression $-(a+b)*(c+d)+(a+b+c)$ in to quadruple, triple and indirect triple.	5M	CO4	BL5

OR

9		Explain in brief about different Principal sources of optimization techniques with suitable examples.	10M	CO4	BL4

10	a)	What is common sub expression elimination?	5M	CO5	BL1
	b)	What is a Flow Graph? Explain how a given program can be converted in to a Flow graph	5M	CO5	BL4

OR

11		Define code generator. Discuss about Instruction Selection and Register allocation?	10M	CO5	BL2

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