Code No: RT31051 **R13** SET - 1

III B.Tech I Semester Supplementary Examinations, October/November - 2019

COMPILER DESIGN

(Computer Science and Engineering)

Time: 3 hours Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B)**
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A **(22 Marks)**

1	a)	What are the features of a Lexical analyzer?	[3M]
	b)	Explain in brief about left most and right most derivations.	[4M]
	c)	List out the rules for FIRST and FOLLOW.	[3M]
	d)	Describe in brief about types of LR parsers.	[4M]
	e)	What is common sub expression elimination?	[4M]
	f)	Discuss about Instruction Selection and Register allocation.	[4M]

PART –B **(48 Marks)**

2	a)	Define Compiler? Explain in brief about various language processing tools.	[4M]
	b)	Construct a Finite Automaton for the Regular Expression (00+11)*?	[8M]
	c)	Differentiate between NFA and DFA.	[4M]
3	a)	Discuss in brief about LL(1) Grammars.	[3M]
	b)	Differentiate between Top down and bottom up parsing techniques.	[8M]
	c)	Construct FIRST and FOLLOW for the Grammar: E→E+T/T, T→T*F/F, F→(E)/id.	[5M]
4	a)	Construct LALR Parsing table for the grammar S→L=R/R, L→*R/id, R→L.	[8M]
	b)	Define Ambiguous Grammar? Check whether the grammar S→aAB, A→bC/cd, C→cd, B→c/d, is Ambiguous or not?	[8M]
5	a)	Define Intermediate code generator. Explain in brief about different forms of Intermediate code generation.	[8M]
	b)	Explain in brief about Type checking and Type Conversion.	[8M]
6	a)	Differentiate between Static and Dynamic Storage allocation Strategies.	[8M]
	b)	What is dangling Reference in storage allocation? Explain with an Example.	[8M]
7	a)	Explain in brief about peephole optimization techniques.	[8M]
	b)	What is a Flow Graph? Explain how a given program can be converted in to a Flow graph?	[8M]

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