Nirma University

Institute of Technology

Semester End Examination (IR), December - 2021

B. Tech. in Computer Engineering / Information Technology, Semester-VII

IT794 Compiler Construction

Roll No. _____ Supervisor's initial with date: _____

Time: 2 hours Max. Marks: 50

Instructions:
1. **Attempt all questions.**
2. **Figures to right indicate full marks.**
3. **Draw neat sketches wherever necessary.**
4. **Assume suitable data wherever necessary and clearly indicate it.**

Q-1.	**Do as directed.**	**[15]**
A CO-1	Show translation of a statement through different compiler phases. statement: area = ½ * base * height	[05]
B CO-1	Check and prove whether the following grammar is ambiguous or not A → aAbA | bAaA | ε	[05]
C CO-1	Construct minimum state DFA for (p+q)*p(p+q)	[05]
	OR	
C CO-1	List and discuss cousins of compiler.	[05]
Q-2.	**Do as directed.**	**[20]**
A CO-2	Check whether the following grammar is LL(1) grammar or not. E → E + T | T T → T *F | F F → (E) | id	[06]
B CO-2	Check whether the following grammar is SLR(1) or not. S → L = R S → R L → *R L → id R → L	[07]
C CO-2	Construct Syntax directed definition for following grammar. D → TL T → int | real L → L_1,id | id	[07]

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Q-3. Answer the following. **[15]**

A CO-3	Discuss different type expression in Type systems.	[05]
	OR	
A CO-3	Explain activation tree. Draw an activation tree of quick sort program.	[05]
B CO-3	Discuss different types of storage allocation strategies.	[05]
C CO-3	Draw quadruple and triple representation for following statement. A = b*c + b*-c	[05]
	OR	
C CO-3	Discuss different code optimization techniques in detail.	[05]