Sardar Patel Institute of Technology

Bhavan's Campus, Munshi Nagar, Andheri (West), Mumbai-400058, India

(Autonomous College Affiliated to University of Mumbai)

~~End Semester~~ Examination (Makeup)

July 2019

Max. Marks: 60

Class: TE

Course Code: CE61

Duration: 3 Hrs

Semester: VI

Branch: Computer

Name of the Course: System Programming and Compiler Construction

Instructions:
1. All questions are compulsory
2. Assume suitable data if necessary
3. Draw neat diagram wherever required.

Q No.		Max. Marks	CO
Q.1 A	Write an algorithm for pass 2 of SIC assembler.	6	CO2
Q.1 B.	Describe the features of MS DOS linker. **OR** Explain Dynamic Linking.	6	CO1
Q.2 A.	Illustrate with an example, macro time conditional statements and macro time looping statements.	6	CO2
Q.2 B.	Consider a Grammar G as follows : $S \rightarrow W$ $W \rightarrow ZXY/XY$ $Y \rightarrow c/\epsilon$ $Z \rightarrow a/d$ $X \rightarrow Xb/\epsilon$ where S(Start Symbol), W, Y, Z and X are non-terminals and a, b, c and d are terminals. A. Find first and follow sets of every non terminal symbols of the given grammar. Explain the rules applied while finding the first and follow sets. B. Determine whether the above grammar is LL(1) grammar or not(State reason). C. Whether the grammar is LL(1) or not, construct the full LL(1) parsing table for the same. **OR** Construct the CLR(1) parsing table for the following grammar:- $S \rightarrow AB$ $A \rightarrow aAb/a$ $B \rightarrow d$ where S(Start Symbol), A and B are non-terminals and a, b and d are terminals.	08	CO3
Q.3 A.	Explain error recovery strategies in parsers.	5	CO3
Q.3 B.	Write a short note on Lexical Analyzer generator Lex along with a sample lex program.	5	CO3

Q.4 A.	What are the different types of Syntax Directed Definitions? Explain each of them with an example.	6	CO3
	OR		
	Write a short note on code generation algorithm with an example.		
Q.4 B.	What are the different intermediate code representations? Create Directed Acyclic Graph for a particular example with the help of SDD.	8	CO3 CO4
Q.5 A.	Describe the characteristics of peephole optimisation.	5	CO3 CO4
Q.5 B.	Explain copy restore and call by name parameter passing method with example.	5	CO5