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

MAY/JUNE 2018

Max. Marks: 100 | **Duration: 3 Hours**

Class: TE | **Semester: VI**

Course Code: CPC601 | **Branch:COMPS**

Name of the Course: System Programming and Compiler Construction

Instruction:

(1) All questions are compulsory
(2) Draw neat diagrams
(3) Assume suitable data if necessary

Q No.		Max. Marks	CO
Q.1 (a)	Consider the following grammar S → A A → Bb / Cd B → aB / ε C → cC / ε A. Construct LL(1) parsing table. B. State with reason that the above grammar is LL(1) or not. C. Parse the given input string by using LL(1) parser : cccd **OR** Consider the following grammar:- S → aSbS S → a A. Construct the SLR(1) parsing table B. State with reason that the above grammar is SLR(1) grammar or not.	10	CO3
Q.1 (b).	A. What are the types of conflicts in LR parsing? Explain them with respect to LR(0) parser with examples. B. Write a lex program to print number of words, digits, and lines written in a file.	5 5	CO3
Q. 2(a)	With reference to Run time environment explain Static and Heap allocation strategies in detail	10	CO5
Q. 2(b)	Write short notes on: A.Recognition of keywords and identifiers in lexical analysis using transition diagram. B.Error recovery strategies in syntax analysis.	10	CO3

Q.3 (a)	Draw and explain the different instruction formats supported by IBM 360/370 Machine.	10	CO1
Q.3 (b)	Draw and explain flowchart of pass 1 of two pass assembler ? Explain the structure of databases used with example OR For the following program show the entries in symbol table , base table and generate machine code JOHN START 0 USING * , 15 L 1 , FIVE A 1 , FOUR ST 1 , TEMP FOUR DC F'4' FIVE DC F'5' TEMP DS 1F END	10	CO2
Q.4 (a)	With reference to IBM 360/370 draw and explain flowchart of pass 1 of direct Linking Loader? specify the databases used by it. OR For following program show the contents of ESD , TXT , RLD and END Card. JOHN START ENTRY RESULT EXTERN SUM BALR 12 , 0 USING * , 12 ST 14 , SAVE L 1 , POINTER L 15 , ASUM BALR 14 , 15 ST 1 , RESULT L 14 , SAVE BR 14 TABLE DC F'1,7,9,10,3' POINTER DC A(TABLE) RESULT DS F SAVE DS F ASUM DC A(SUM) END	10	C01
Q.4 (b)	Draw and Explain flowchart of pass2 of macroprocessor.	10	CO2

Q.5 (a)	What do you mean by three address code.
	Generate three address code for given expression
	while (a < b) do
	if (c < d) then
	x = y + z
	else
	x = y + z
	
	OR
	
	Write a syntax directed definition that generates three address code for Booleans.
		10	CO4

Q.5 (b)	Explain with example code generation from DAG ? Comment on optimality ordering with reference to it.	10	CO3