Sardar Patel Institute of Technology

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

(Autonomous College Affiliated to University of Mumbai)

(86)

End Semester Examination

April/May 2018

Max. Marks: 100

Class: T.E.

Course Code: CPC601

Duration: 3 Hours

Semester: VI

Branch:Computer

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)	Write short notes on following:- A. Recursive descent parsing B. Removal of Left recursion along with types with example.	10	CO3
Q.1 (b)	Draw the diagram of phases of compiler. Illustrate the output after each phase of the compiler for the following statement: d=b*b-4*a*c	10	CO3
Q.2 (a)	Consider the following grammar $S \rightarrow AaAb\ /\ BbBa$ $A \rightarrow \varepsilon$ $B \rightarrow \varepsilon$ A. Construct CLR parsing table. B. State with reason that the above grammar is CLR or not? **OR** What is an operator grammar? Explain operator precedence parser with the help of following grammar and parse the input string "id+id". $E \rightarrow E + E \mid E * E \mid id$	10	CO3
Q.2 (b)	What do you mean by dependency graph? Give an algorithm to construct dependency graph from parse tree? explain with example.	10	CO3

Q.3 (a)	With reference to IBM 360/370 draw and explain flowchart of pass 2 of direct Linking Loader? Specify the databases used by it.	10	CO1
	OR		
	Consider the following program segments PG1 START ENTRY SYM11 EXTRN PG2, SYM23 SYM11 DC A(SYM11 - PG1), (SYM23 - PG2) END PG2 START ENTRY SYM23 EXTRN PG1, SYM11 SYM21 DC A(SYM11- 2),A(SYM21) SYM22 DC A(PG2 + 4),A (SYM21 - PG2) SYM23 DC A(SYM21 - PG1) END Assume these two programs are to be loaded starting at location 400 in order PG1 and PG2. Fill the GEST for each symbol. Also give the ESD and RLD card entries for the above program segments.	10	
Q.3 (b)	With reference to IBM 360/370 draw flowchart of pass 2 of assembler? specify the databases used by it.	10	CO2
Q.4 (a)	Explain code generator algorithm in detail.	10	CO4
	OR		
	What are the different issues in code generator? Explain.	10	
Q.4 (b)	Draw and Explain flowchart of pass2 of macroprocessor.	10	CO2
Q.5 (a)	Why is Intermediate code needed in the translation process by compiler ? Describe suitable formats for intermediate code.	10	CO4
	OR		
	What do you mean by basic block ? Explain with example how to partition Three address code into basic blocks?	10	
Q.5 (b)	Write short notes on: A. YACC tool B. Garbage collection and compaction	 05 05	 CO3 CO5