Roll Number:_____

ThaparInstitute of Engineeringand Technology, Patiala
Department of Computer Science and Engineering

B E- COE, CSE (VII Semester)EST	Course Code: UCS802
	Course Name: Compiler Construction
March 3, 2023 5:30 to 8:30	
Time: 3 Hours, M. Marks: 100	Name Of Faculty Dr. Rohit Ahuja
	Mobile Number:9425624880

Note: **Attempt all questions with proper justification. Assume missing data, if any, suitably. Questions are on both sides of paper.**

Q1. (a)	Describe the various phases of the compiler and examine with programs segment (ii).Describe in detail about symbol table. (iii) In tabular form explicitly state 5 difference between SLR, LALR and CLR parsers.	(12)
Q1. (b)	Describe the following (i) Parser Generators (iii) Syntax directed translation engines (iii) Scanner (ii) Generators.	(8)
Q2. (a)	(i) Differentiate between lexeme, token and pattern (ii) What are the issues in lexical analysis phase (iii) Construct DFA to recognize the language (a/b)*ab	(12)
Q2(b)	Explain LL(1) grammar for the sentence S→ iEts/iEtSeS/a E->b	(8)
Q3. (a)	Write the Quadruples, Triples, and Indirect triples for the expression given below: $a + b \times c / e \uparrow f + b \times c$	(10)
Q3(b)	Construct a DFA for the regular expression (a/b)*a stepwise. Firstly, convert it into NFA using Thompsons construction then DFA using subset construction.	(10)
Q4. (a)	Consider Stack implementation of Shift reduce parsing for the grammar E→ E+E E→ E*E E→(E) E→id And the input string is **id1 + id2 * id3**	(10)

Q4.(b)	Find the first and Follow for the following grammar: E->TE' E'->+TE'/ε T->FT' T'->*FT'/ε F->(ε)/id	(10)
Q5 (a)	Consider the given grammar $$S \rightarrow I | other$$ $$I \rightarrow if\ S | if\ S\ else\ S$$ a) Construct LR(0) items for the given grammar. b) Construct the DFA of LR(0) items.	~~(2+2)~~ (4+4)
Q 5 (b)	Consider the given grammar $$S \rightarrow AaAb | BbBa$$ $$A \rightarrow \epsilon$$ $$B \rightarrow \epsilon$$ a) Construct First and Follow sets for the non-terminals. b) Construct the LL(1) parsing table c) Show the parsing stack and the actions for the string: ba	~~(2+2+2)~~ (4+4+)
	***********End of Paper***************	