RAMAPURAM SRM

SRM INSTITUTE OF SCIENCE AND TECHNOLOGY

RAMAPURAM CAMPUS

Department of Computer Science and Engineering

18CSC304J – COMPILER DESIGN (2022 – 2023)

CONTINUOUS LEARNING ASSESMENT – 2

Branch: CSE & Specialization (Except CSBS) **Set : A**

Year/Sem: III/VI **Date:**

Max. Marks: 50 **Duration: 90mins**

PART-A (10x1=10)

ANSWER ALL THE QUESTIONS

b
b
a
a
c
a
a
b
c
a,c

Q.No	Questions	Marks	CO	BL	PI
1	Which of the following function is called the canonical collection of LR(0) item? a) FIRST( ) [✓ b) GOTO( )] c) COMPUTE( ) d) FOLLOW( )	1	2	1	2.8.1
2	Identify which of the following tree is the pictorial identification of the derivation? a) The oct tree [✓ b) The parse tree] c) The binary tree d) The derivation tree	1	2	1	1.7.1
3	Identify which of the following derivations does a top-down parser use while parsing an input string? [✓ a) Leftmost derivation] b) Leftmost derivation in reverse c) Rightmost derivation d) Rightmost derivation in reverse	1	2	1	1.7.1
4	What is the TRAILING(S) for the following grammar? S→S-B|B B→B*A|A A→(S)|id [✓ a)TRAILING(S)={-,*,),id}] b)TRAILING(S)={-,*,(,)} c)TRAILING(S)={-,*,(,id} d)TRAILING(S)={-,*,(}	1	3	2	2.8.2
5	Reverse of a right most derivation is called ------------. a)reduction b)production [✓ c)handle] d)base	1	3	1	1.7.1
6	Which of the following derivations does a top-down parser use while parsing an input string? [✓ a) Leftmost derivation] b) Leftmost derivation in reverse c) Rightmost derivation d) Rightmost derivation in reverse	1	2	1	1.7.1
7	Which one of the following is a top-down parser? [✓ a) Recursive descent parser] b) Operator precedence parser c) An LR(k) parser d) An LALR(k) parser	1	2	1	1.7.1
8	Identify why the grammar A→AA|(A)|∈ is not suitable for predictive-parsing? a) Ambiguous [✓ b) Left recursive] c) Right recursive d) An operator grammar	1	2	1	2.8.1

9	LEADING(S) for the following grammar? S→S-B|B B→B*A|A A→(S)|id a)LEADING(S)={-,*,),id} b)LEADING(S)={-,*,(,)} [✓ c)LEADING(S)={-,*,(,id}] d)LEADING(S)={-,*,(}	1	3	3	2.8.1
10	which of the following grammar rules violate the requirements of an operator grammar? P, Q, R are nonterminal and s, r, s, t are terminals. 1.P→QR 2. P→QsR 3. P→ε 4. P→QtRr [✓ a) 1 only] b) 2 and 3 only [✓ c) 3 and 4 only] d) 2 and 4 only	1	3	2	1.7.1

PART-B (4x4=16)

ANSWER ANY FOUR OUT OF SIX QUESTIONS

Q.No	Questions	Marks	CO	BL	PI
11	Define a context free grammar.	4	2	1	1.7.1
12	Solve the grammar by eliminating Left Recursion: E → E + T | T T → T * F | F F → (E) | id	4	2	2	2.8.1
13	Perform Shift Reduce Parsing for the following S->(L)|a L->L,S|S for the input string: (a,(a,a)) .	4	3	2	2.8.1
14	Distinguish between Top-down and Bottom-up parser.	4	2	1	1.7.1
15	Enumerate the concepts of Operator Precedence parser with an example	4	3	1	2.8.1
16	Elaborate the computation rules of FOLLOW.	4	3	1	1.7.1

PART-C (2x12=24)

ANSWER ALL THE QUESTIONS

Q.No	Questions	Marks	CO	BL	PI
17(a)	Define Recursive Descent Parser. Discuss the steps involved in Recursive Descent Parsing. Construct Recursive Descent Parser for the following grammar: E → i E' E'→ + i E' | ε	12	2	2	2.8.1
	(OR)				
17 (b)	Construct a Predictive Parsing Table for the following grammar: E → TE' E' → +TE' | ε T → FT' T' → FT' | ε F → (E) | id	12	2	3	2.8.1
18(a)	Construct the parsing table for SLR parser for the following S->L=R S-> R L->*R L->id R->L Show the parsing action for "id=id"	12	3	3	2.8.1
	(OR)				
18 (b)	Consider the grammar given below. S -> CC C -> aC C -> d Construct a CLR parsing table for the above grammar	12	2	2	2.8.1