SET 2

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USN

School of Computer Science and Engineering

B.Tech (Hons.)

CP-1 Question Paper

Academic Year 2024-2025

Course: Compiler Design	Course Code: CS3704	Semester: VI
Time: 2.00PM -3.00PM	Max Marks: 15	Date :13/02/2025

Sl. No.	Questions	Marks	L1-L6	CO
1.	A regular expression for accepting strings with exactly one 1 more than 0's is A. 0*1 B. (0/1)*1(0/1)* C. (0/1)*1(0/1)*|1(0|1)* **D. Not Possible**	**1**	**L3**	**CO1**
2.	The automation which allows transformation to a new state without consuming any input symbols: A. NFA B. DFA C. Pushdown automata **D. All of the mentioned**	**1**	**L2**	**CO1**
3.	In a lex specification file the rule section begins with ----------%%---------- symbol	**1**	**L2**	**CO1**
4.	The number of tokens in the following C statement is printf("GOOD MORNING", i, &j); A.3 B.11 **C.10** D.21	**1**	**L3**	**CO1**
5.	The output of the Lex compiler is a ____lex.yy.c_____ that can recognize patterns in text and execute corresponding actions.	**1**	**L2**	**CO1**
6.	Identify which one of the following grammars is free from left recursion? B A. $S \rightarrow AB$, $A \rightarrow Aa \mid b$, $B \rightarrow c$ B. $S \rightarrow Ab \mid Bb \mid c$, $A \rightarrow Bd \mid \epsilon$, $B \rightarrow e$ C. $S \rightarrow Aa \mid B$, $A \rightarrow Bb \mid Sc \mid \epsilon$, $B \rightarrow d$ D. $S \rightarrow Aa \mid Bb \mid c$, $A \rightarrow Bd \mid \epsilon$, $B \rightarrow Ae \mid \epsilon$	**1**	**L3**	**CO2**

L1- Remember, L2- Understand, L3 – Apply, L4- Analyse, L5 – Evaluate, L6 – Create

7.	Loops are the major targets for optimization A. Loop may go to infinite execution **B. Loop body is repeated to several times** C. Condition check takes exceedingly large time D. None of the other options	**1**	**L2**	**CO1**
8.	Eliminate left recursion in the productions given below: A → Ba |Aa |c B → Bb | Ab | d **A → BaA' / cA'** **A' → aA' / ∈** **B → cA'bB' / dB'** **B' → bB' / aA'bB' / ∈**	**2**	**L3**	**CO2**
9.	Consider the following statements related to compiler construction : I. Lexical Analysis is specified by context-free grammars and implemented by pushdown automata. II. Syntax Analysis is specified by regular expressions and implemented by finite-state machine. Which of the above statement(s) is/are correct ? A. Only I B. Only II C. Both I and II **D.Neither I nor II**	**1**	**L2**	**CO2**
10.	Identify tokens generated by the scanner for the following statement and give the total count of the tokens? /* for loop */ printf("i = %d, &i = %x", i++, &i); **11**	**1**	**L3**	**CO1**
11.	Match all items in Group 1 with those given in Group 2. Group 1 Group 2 P. Syntax tree i. Code generator Q. Character stream ii. Syntax analyser R. Intermediate representation iii. Semantic analyser S. Token stream iv. Lexical analyser **P—iii Q—iv R—i S-- ii**	**2**	**L3**	**CO1**

12.	A CFG G is given with the following productions where P is the start symbol, Q is a non-terminal and q and s are terminals. P□qP|Q Q□qQs | sQq | ε For the string"qqssqqs" examine how many steps required to derive the string and how many parse trees are there? P□qP □qQ □qqQs □qqsQqs □qqssQqqs □qqssqqs There are 6 steps and 1 parse tree	**2**	**L4**	**CO2**

Course Outcomes

1.Develop skills to devise, select, and apply appropriate tools and techniques for effective compiler design.

2.Apply context-free grammars (CFG) to develop language specifications.

Marks Distribution									
L1	L2	L3	L4	L5	L6	CO1	CO2	CO3	CO4
	5	8	2			9	6		