

Roll No.:

SGT UNIVERSITY

END TERM THEORY EXAMINATION JULY-2022

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|---------------------------|-----------------------------|----------------|--------------------------|
| Faculty/College of Study: | Engineering & Technology | Year/Semester: | 6 th Semester |
| Program: | B.Tech (CSE) Gen./Apple/IBM | Duration: | 03:00 Hrs |
| Course/Subject: | Compiler Design | Maximum Marks: | 60 |
| Course/Subject Code: | 13020668, 13020601 | Batch: | 2018 & 2019 |

Instructions:-

1. Write Your Roll No. on the Question Paper.
2. Candidate should ensure that they have been provided correct question paper. Complaint(s) in this regard, if any should be made within 15 minutes of the commencement of the exam. No complaint(s) will be entertained thereafter.
3. All Questions are compulsory. Marks are indicated against each question.
4. Illustrate your answer with diagram wherever required.

SECTION-A

(Very Short Answer Type Questions)

Note: All Questions are compulsory: -

[12X1=12 Marks]

| S. No. | Question | Marks Allotted |
|--------|--|----------------|
| 1 | Name types of SDT. | 1 |
| 2 | Describe Quadruple. | 1 |
| 3 | Identify the lexemes and their corresponding tokens in the following statement: printf ("Simple Interest=%f\n", si); | 1 |
| 4 | Specify the functionality of linker. | 1 |
| 5 | Define common sub expressions? | 1 |
| 6 | Explain DFA. | 1 |
| 7 | Explain follow(). | 1 |
| 8 | Write about parser in short? | 1 |
| 9 | Write the various types of top down parser. | 1 |
| 10 | Describe the term Environments and states. | 1 |
| 11 | What is storage allocation? | 1 |
| 12 | Name the errors in the lexical phase. | 1 |

SECTION-B
(Short Answer Type Questions)

Note: All Questions are compulsory: -

[4X2=8 Marks]

| S. No. | Question | Marks Allotted |
|--------|---|----------------|
| 13 | What is ambiguous grammar? Give an example. | 2 |
| 14 | Define left recursion. $E \rightarrow E+E \mid E*E \mid a \mid b$ Is the following grammar left recursive? | 2 |
| 15 | Differentiate Abstract Syntax Tree and DAG representations of intermediate code. | 2 |
| 16 | Explain lexical phase error. | 2 |

SECTION-C
(Descriptive Answer Type Questions)

Note: All Questions are compulsory: -

[4X4=16 Marks]

| S. No. | Question | Marks Allotted |
|--------|---|----------------|
| 17 | Explain the usage of YACC parser generator in construction of a Parser. | 4 |
| 18 | $G: S \rightarrow iEtS \mid iEtSes \mid a, E \rightarrow b$. Write the rules for computing FIRST() and FOLLOW(). | 4 |
| 19 | What is code generation? Explain String matching. | 4 |
| 20 | What is an intermediate code generator? Explain Quadruple with its advantages and disadvantages. | 4 |

SECTION-D
(Long Answer Type Questions)

Note: All Questions are compulsory: -

[4X6=24 Marks]

| S. No. | Question | Marks Allotted |
|--------|--|----------------|
| 21 | Describe the phases of the compiler and apply the analysis phases of the compiler for the following assignment statement. Position:= initial +rate *60 | 6 |
| 22 | Define LL(1) grammar. Is the following grammar LL(1). $G: S \rightarrow iEtS \mid iEtSes \mid a, E \rightarrow b.$ | 6 |
| 23 | Explain the different storage allocation strategies. | 6 |
| 24 | Explain the role of DAG in optimization with example | 6 |