

SECTION - A

2. (a) What do you mean by Compiler ? Explain various Phases of Compiler. 10
(b) Explain various compiler construction tools. 5
3. (a) Construct a Finite Automata equivalent to the regular expression : 10
 $(a|b)^*|(ab)^*b|a^*(bb)^*$
(b) Explain implementation of lexical analyzer. 5

SECTION - B

4. (a) Explain the parsing techniques with a hierarchical diagram. 7.5
(b) What are the problems associated with Top Down Parsing ? 7.5
5. Explain operator precedence parsing in detail. Explain with the help of example. 15

SECTION - C

6. (a) Prepare a canonical parsing table for the given grammar : $S \rightarrow CC \quad C \rightarrow cC/d$ 10
(b) Explain three address code, quadruples and triples. 5

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7. (a) Construct SLR parsing table for the following grammar : 7.5

$R \rightarrow R' | R | RR | R^* | (R) | a | b$

- (b) Write Rules to construct FIRST Function and FOLLOW Function. Consider Grammar. 7.5

$E \rightarrow E+T | T$

$T \rightarrow T * F | F$

$F \rightarrow (E) | id$

SECTION - D

8. (a) What is the use of symbol table ? Explain the various data structures associated with symbol table. 8
(b) Explain the various types of errors generated during the various phases of the compiler. How does we recover from these errors ? 7
9. Explain the following with example : $2 \times 7.5 = 15$
(a) Various machine independent code optimization techniques.
(b) Register allocation for temporary and user defined variables.

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KOLL NO.

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**B. Tech. 6th Semester (CSE)
Examination – May, 2023**

COMPILER DESIGN

Paper : PCC-CSE-302G

Time : Three Hours]

[Maximum Marks : 75

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*.

1. Explain the following questions : 6 × 2.5 = 15

- (a) Role of lexical analyzer
- (b) Language Processors
- (c) Recursive Descent Parser
- (d) Handle pruning
- (e) Rules to construct the LR (0) items
- (f) Forms of objects code

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P. T. O.