Total No. of Questions : **9**]   [Total No. of Pages : **3**

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**B.Tech. (CSE) 6th Semester (Supplementary)
Examination, July–2021**

(G Scheme)

COMPILER DESIGN

Paper–PCC–CSE–302–G

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 :– Question No. **1** is compulsory. Attempt *five* questions in total by selecting *one* question from each Unit.

1. (a) Write a short note on ambiguous grammar.

   (b) Compiler–compiler

   (c) Differentiate between tokens, patterns and lexemes.

(d) Role of regular expression

(e) What is phrase level error recovery ?

(f) What is register allocation in code generation ?   2½×6=15

Unit–I   15 each

2. Explain different phases of compiler.

3. What is Finite Automata ? Convert NFA (a|b)* abb into equivalent QFA.

Unit–II

4. (a) What is CFG ?

(b) Explain how regular expressions are used for token specification.   8,7

5. Perform shift-reduce parsing for string id_1 + id_2 * id_3 for the following grammar :

$$E \rightarrow E + E \mid E * E \mid (E) \mid id$$ 15

Unit–III

6. (a) Explain syntax directed translation scheme.

(b) Explain three-address codes, triples and quadruples.   6,9

7. Consider the following grammar :

$$E \rightarrow E + T \mid T$$
$$T \rightarrow T * F \mid F$$
$$F \rightarrow (E) \mid id$$

and build SLR parsing table for it.   15

Unit–IV

8. (a) List the various error recovery strategies.

(b) Explain the importance of symbol tables in compiler design.   7,8

9. Explain the various strategies for code generation.   15