

Roll No. ....

**24488**

**B. Tech. 7th Semester (CSE)  
Examination – February, 2022**

**COMPILER DESIGN**

Paper : CSE-405-F

Time : Three Hours ]

[ Maximum Marks : 100

*Refer 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 Unit. Question No. 1 is compulsory. All questions carry equal marks.

1. Write short notes on :

4 × 5 = 20

- (a) Compiler - Construction tools
- (b) Pigeon - hole optimization
- (c) Operator precedence parsing
- (d) Symbol table

**UNIT – I**

2. (a) Role & working of lexical analyzer. 10  
(b) Regular expressions 10

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3. Describe structure of compiler & its different phases. 20

**UNIT - II**

4. Construct an LR parsing table for the following grammar: 20

$$E \rightarrow E + T \mid T$$

$$T \rightarrow T * F \mid F$$

$$F \rightarrow (E) \mid id$$

5. Check if the following grammar is LL(1) or not: 20

$$S \rightarrow a B D h$$

$$B \rightarrow B b \mid c$$

$$D \rightarrow E F$$

$$E \rightarrow g \mid \epsilon$$

$$F \rightarrow f \mid c$$

**UNIT - III**

6. Write 3-address code (quadruples, triples & indirect-triples) for the following instruction: 20

$$S = A + B + C$$

7. Elaborate the various error detection & error recovery strategies for each phase of compiler. 20

**UNIT - IV**

8. What is code generation? Explain how the intermediate code is transformed into target object code. 20

9. Explain the different types of code optimization. 20

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