# LEARN LONER

**BT-6/M-20**                    **36113**

COMPILER DESIGN

Paper–CSE-302N

Time : Three Hours]                    [Maximum Marks : 75

**Note :** Attempt *five* questions in all, selecting at least *one* question from each unit.

## UNIT–I

**1.**  (a)  Explain the various compiler construction tools in brief.

7½

(b)  How can you convert a regular expression to NFA? Explain using suitable examples.                    7½

**2.**  (a)  Describe the language denoted by the following regular expression :

(i)    0( 0 | 1)* 0.

(ii)   ((s | 0) | *) *.

(iii)  (0 | 1)* 0( 0 | 1)( 0 | 1).                    7½

(b)  Explain the working of a Lexical Analyzer using a small example.                    7½

## UNIT–II

**3.**  (a)  Differentiate between lexical and syntactic analysis. How can you eliminate ambiguity during lexical analysis? Explain using suitable examples.                    7½

    (b)  What is top-down parsing? Write and explain the steps to parse id + id * id using top-down parsing.   7½

**4.**   (a)  Construct a recursive decent parser starting with the following grammar :

      S-> + SS | – SS | a.                     7½

    (b)  What is canonical LR parser? Explain using suitable examples.           7½

### UNIT–III

    **5.**  (a)  How intermediate code is generated for declarative statement? Explain using suitable examples.   7½

        (b)  What is meant by backpatching for Boolean expressions? Explain using suitable examples.   7½

**6.**   Design and explain a target machine model using suitable examples.                   15

### UNIT–IV

**7.**   Explain the procedure for optimization of basic blocks in detail using suitable examples.            15

**8.**   (a)  What are the various source language issues? Explain using suitable examples.       7½

    (b)  Write short note on Heap Storage Management.   7½

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