Roll No. ..... Total Pages : 2

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) ((ε | 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