C 32020

Name.....

Reg.No.....

SIXTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
JUNE 2007

CS 04 605—COMPILER DESIGN

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *the questions.*

I. (a) Define DFA and NDFA.

(b) Explain the structure of a compiler.

(c) List all the LR(0) items for the grammar S → AS/b, A → SA/a.

(d) Explain bottom-up parsing.

(e) Explain the call by reference method of parameter parsing.

(f) Explain the method of type conversion with examples.

(g) Explain how the three address codes are generated.

(h) Discuss on loop optimization.

(8 × 5 = 40 marks)

II. (a) Construct NDFA for the regular expression (a*/b*)* and convert it to DFA.

Or

(b) Explain the various compiler construction tools.

(15 marks)

III. (a) Describe the procedure for designing a recursive decent parser.

Or

(b) Explain LR parser with an example.

(15 marks)

IV. (a) Discuss in detail the symbol table organization.

Or

(b) Explain the design of a predictive translator with an example.

(15 marks)

V. (a) Explain the various code optimization techniques.

Or

(b) Explain the operation of a simple code generator for pointer assignments and conditional statements.

(15 marks)

[4 × 15 = 60 marks]