(IT 323)

III/IV B.Tech. DEGREE EXAMINATION,
OCTOBER 2005.

Second Semester

COMPILER DESIGN

Time : Three hours Maximum : 70 marks

Answer Question No. 1 compulsorily.

(1 × 14 = 14)

Answer ONE question from each Unit.

(4 × 14 = 56)

All questions carry equal marks.

1. (a) What is LEX?

(b) Define parse tree.

(c) What is left recursion? Give example.

(d) What are the entries in symbol table?

(e) Define phase.

(f) Define SLR parsing table.

(g) What is the purpose of YACC tool.

(h) Write the post fix rotation of $(a + b) * c$.

(i) Define syntax tree.

(j) What is meant by syntactic error?

(k) Explain call-by-name.

(l) Construct DAG for the expression

$a + a * (b-c) + (b-c) * d.$

(m) What is meant by activation record?

(n) What is reduction in strength?

UNIT I

2. (a) Draw a block diagram of phases of a compiler and indicate the main functions of each phase.

(b) Write the chief differences between compiler and interpreter.

Or

(c) Explain hexical analysis briefly.

(d) What are the different translation rules of a LEX program?

UNIT II

3. (a) Construct predictive parse table for the following grammar :

$E \rightarrow E+T/T$

$T \rightarrow T\ F/F$

$F \rightarrow F*/a/b.$

Or

(b) Construct LALR(1) parse table from the following grammar :

$S \rightarrow Aa / b\,Ac / dc / b\,da$

$A \rightarrow d.$

UNIT III

4. (a) Write top-down translation scheme to produce quadruples for Boolean expressions.

(b) Translate $a * - (b+c)$ in to post fix form.

Or

(c) Discuss the symbol table organization for block structured language like Pascal or 'C'.

UNIT IV

5. (a) Discuss and analyze about all the allocation strategies in sum-time storage environment. (10)

(b) Why is next use information collected by a code generator? (4)

Or

(c) Describe various error recovery strategies followed by parser of a compiler.

(d) Write short notes on peephole optimization Technique.
