

**III B.Tech II Semester Supplementary Examinations,
November/December 2005
LANGUAGE PROCESSORS
(Common to Computer Science & Engineering and Information
Technology)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. (a) What is the role of lexical analyzer. [6]
 (b) Construct an NFA for the regular expression $R=(a+b)^*abb$ convert it in to an equivalent DFA. [10]
2. (a) Distinguish between simple precedence and operator precedence parsing techniques. [6]
 (b) Construct simple precedence parse table for the following grammar.
 $E \leftarrow E + T | T$
 $T \rightarrow T * F | F$
 $F \rightarrow (F) | id$ [10]
3. Explain the algorithm for translator of S-attributed grammars along with bottom up parsing with suitable examples. [16]
4. (a) What are the advantages and disadvantages of Structural equivalence. Explain with example. [8]
 (b) What are the advantages and disadvantages of Name equivalence. Explain with examples. [8]
5. (a) What is an activation record? Explain how it is related with run time storage organization. [8]
 (b) Write a short notes on heap strategy and run-time storage allocation. [8]
6. (a) What are loop invariant components. Explain how they effect the efficiency of a program. [8]
 (b) Compare various forms of three address code. [8]
7. (a) Write an algorithm to compute reaching definition informatory for a flow graph. [8]
 (b) Explain the working of the above algorithm using a suitable example. [8]
8. (a) Differentiate single pass and two pass translation of an assembler. [8]
 (b) Explain Macro expansion and Lexical expansion. [8]
