

Code: 9A05504

B.Tech IV Year I Semester (R09) Regular & Supplementary Examinations December 2015

COMPILER DESIGN

(Computer Science & Engineering)

Time: 3 hours

Max. Marks: 70

Answer any FIVE questions

All questions carry equal marks

- 1 (a) How would you construct DFA directly from regular expression?
(b) Give general format for LEX program.
- 2 Consider the grammar given below
 $S \rightarrow iEtS \mid iEtSeS \mid a$
 $E \rightarrow b$
Where i,t,e stand for if, then and else and construct SLR parsing table.
- 3 Explain the procedure for constructing LALR parsing tables.
- 4 (a) Construct a syntax-directed translation scheme that translates integers into roman numerals.
(b) What is syntax directed translation? How it is used for translation of expressions?
- 5 (a) What is an activation record? What is its role in the process of compilation?
(b) With an example explain how dangling pointer problem occurs.
- 6 Explain in detail about the DAG representation of basic blocks.
- 7 (a) Differentiate between local optimization and global optimization.
(b) What is the meaning of copy propagation? Explain it in detail with example.
- 8 Write about labeling algorithm and heuristic ordering algorithm in code generator.
