

FACULTY OF ENGINEERING

B.E. 3/4 (CSE) II – Semester (Main) Examination, April / May 2013

Subject: Compiler Construction

Time: 3 Hours

Max.Marks: 75

*Note: Answer all questions from Part – A and any five questions from Part – B.***PART – A (25 Marks)**

1. Differentiate between pass and phase. (2)
2. Describe the data structures associated with compiler. (3)
3. Define CFG. Write CFG to recognize palindrome. (3)
4. What is left factoring give example? (3)
5. Write about the fields of activation record. (3)
6. Define S-attributed and L-attributed grammars. (2)
7. Specify applications of SDT. (2)
8. Write about value-number method. (2)
9. Construct DAG for the expression $a + a * (b-c) + (b-c) * d$. (3)
10. What is basic block? (2)

PART – B (5x10 = 50 Marks)

- 11.(a) Explain various phases of compiler with neat diagram. (8)
(b) What is boot strapping? (2)
- 12.(a) Write an algorithm to construct first and follow set. (4)
(b) Construct the predictive parse table for the following grammar and show the moves made by the parser on input $i * i \$$.

$$E \rightarrow TE'$$

$$E' \rightarrow + T\epsilon' / \epsilon$$

$$T \rightarrow FT'$$

$$T \rightarrow *FT'/\epsilon$$

$$E \rightarrow (E) / i$$
 (6)
- 13.(a) Explain the data structures used for symbol table implementation. (5)
(b) Write about syntax directed definitions. (5)
14. Explain machine dependent and machine independent optimizations in detail. (10)
- 15.(a) Explain heap management. (5)
(b) Explain various representations of three address code of an expression
 $X = -a * b + -a * b$ (5)
- 16.(a) Explain shift reduce parser. (5)
(b) What is flow graph? Explain live variable analysis. (5)
17. Write short notes on:
a) Lexical analyzer generator lex. (5)
b) Syntax error handling. (5)
