

MAY 2011

P/ID 17432/RTB

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Time : Three hours

Maximum : 75 marks

PART A — (5 × 5 = 25 marks)

Answer ALL questions.

All questions carry equal marks.

1. (a) Explain the phases of compiler.  

Or

(b) Discuss in detail about Regular Expression.
2. (a) Explain the steps involved in construction of parse table.  

Or

(b) Write short notes on :
  - (i) Operator precedence parsing algorithm.
  - (ii) Precedence function.
3. (a) Discuss briefly about the Syntax Directed Translation Schemes.  

Or

(b) Discuss the Data structures used for symbol table.

4. (a) Describe briefly about Global data flow analysis.

Or

- (b) Write short notes on :  
(i) Loop unrolling  
(ii) Loop jamming.

5. (a) Write about Adhoc error recovery for LR parser.

Or

- (b) Discuss the Lexical phase error.

PART B — (5 × 10 = 50 marks)

Answer any FIVE questions.

All questions carry equal marks.

6. (a) Write an algorithm to produce NFA from a regular expression.  
(b) Define ambiguous grammar with an example.
7. Design a minimal DFA for the Regular expression (aa \*/ bb\*).

8. Eliminate Left Recursion from the following grammar :

$$S \rightarrow a|^(T)$$

$$T \rightarrow T, S | S \text{ and}$$

Find out whether the transformed grammar is LL(1).

9. What is the role of parser? Define the term handle pruning? Explain how the Data structures are used in a handle pruning parser.
10. Write short notes on :
- (a) Three address code
  - (b) Quadruple
  - (c) Triples
  - (d) Indirect triples.
11. Explain in detail about code motion technique with an example.
12. How Peephole optimization overcomes the difficulties encountered in syntax-directed generation of code? Explain.

13. (a) Discuss the Register allocation and assignment.
- (b) Explain simple Code Generation Algorithm and GETREG function.
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