

Roll No.

Total Pages : 2

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BT-7/DX

COMPILER DESIGN (2006-07)

Paper : IT-455

Opt. (i)

Time : Three Hours]

[Maximum Marks : 75

Note : Attempt only *five* questions. All questions carry equal marks.

1. Describe Structure of a compiler in detail. 15
2. (a) Implementation of Lexical Analyzer. 8
(b) What do you mean by Ambiguity? What steps are done to remove the ambiguity? 7
3. The following is an LALR grammar for regular expressions over $\{a,b\}$ using $+$ for union and ϵ for regular expression ϵ . 15

$E \rightarrow E + T \mid T$

$T \rightarrow TF \mid F$

$F \rightarrow F^* \mid (E) \mid a \mid b \mid \epsilon$

Construct the LALR sets of items in Parse table for the above grammar.

4. $E \rightarrow E + T$ 15
 $E \rightarrow T$
 $T \rightarrow T^* F$
 $T \rightarrow F$
 $F \rightarrow (E)$
 $F \rightarrow ID$

Draw the parsing table of the above grammar for LR parser and also show moves of LR parser.

5. Explain in detail three address codes, quadruples and triples. 15
6. What are Symbol table? Explain in detail content and data structure of symbol table. 15
7. Explain DAG representation, construction and its applications. 15
8. (a) What are the problems in code generation? 8
(b) Explain Register allocation & Assignment. 7