

24488

B. Tech. 7th Sem.

(Computer Science Engineering) VIII

Examination – December, 2013

COMPILER DESIGN

'F' Scheme

Paper : CSE-405-F

Time : Three hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complain in this regard, will be entertained after examination.

Note : *First question is compulsory.* Attempt any one question from each of the four section. All questions carry equal marks.

1. (a) Write short notes on different forms of object codes. 5 × 4
- (b) What do you mean by instruction variables? How they are eliminated?
- (c) What do mean by DAG? What are its applications?
- (d) Write short note on regular expressions.
- (e) Describe the data structure for symbol table.

SECTION – A

2. (a) Explain functionality different phases of compiler with the help of example. 10
- (b) What is translator? What are the characteristics of a good translator? 10
3. (a) What are various compiler construction tools? Explain. 10
- (b) Convert the regular expression $(a|b)^*ab(a+b)^*$ into corresponding minimized finite state automata. 10

SECTION – B

4. Construct the predictive parsing table for the following grammar and Test whether the grammar is LL (1) or not? 20

$S \rightarrow 1 AB | \epsilon$

$A \rightarrow 1AC | 0C$

$B \rightarrow 0S$

$C \rightarrow 1$

5. Create 3-address code, quadruple, triple and indirect triple for the following expression: 20

$$a + a*(b - c) + (b - c)*d$$

SECTION – C

6. Consider the following grammar: 20

$$S \rightarrow 0S0 \mid 1S1 \mid 10$$

- (a) Construct the SLR parsing table for the given grammar.
- (b) Construct the LALR parsing table.
7. (a) What are syntax trees? How these can be constructed? 10
- (b) Explain CLR with suitable example. 10

SECTION – D

8. (a) What is meant by register allocation? Why it is considered as important? 10
- (b) Write short note on code generation with suitable example. 10
9. What are different types of errors that can occur? What remedial action does a compiler can take in each case? 20