

Roll No.

24488

**B.Tech. 7th Sem.
(Computer Science Engineering)
Examination-May, 2013**

COMPILER DESIGN

Paper CSE-405-F

Time : 3 hours

Max. Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard will be entertained after the 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 note on the different forms of object codes. 5
- (b) What are semantic and syntactic errors ?
Explain with example 5

- (c) What do you mean by DAG ? What are its applications ? 5
- (d) Write short note on three address code. 5
- (e) Describe the data structure for symbol table. 5

Section - A

2. (a) Convert the regular expression $(a|b)^*ab(a+b)^*$ into corresponding minimized finite state automata. 10

- (b) What do you mean by cross-compilation ? Give some suitable examples ? 10

3. (a) What is the role of lexical analyzer in compilers ? Explain. 10

- (b) What do you mean by input buffering ? How is it useful in lexical analyzer ? 10

Section - B

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

$S \rightarrow AaAb \mid BbBa$

$A \rightarrow \epsilon'$

$B \rightarrow \epsilon'$

5. (a) Explain top down parsing with suitable example. 10

- (b) What is parser ? Write the predictive parsing algorithm with example. 10

Section - C

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

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

7. (a) What are the syntax trees ? How these can be constructed ? 10

(b) How syntax directed translation is implemented ? 10

Section - D

8. (a) Describe register allocation for temporary and user defined variables.

10

(b) What is a symbol table ? Discuss various data structures needed to implement it. 10

9. What are the different types of errors that can occur ? what remedial action does a compiler can take in each case ? 20