

P – 1191

B. E./B. Tech. (Sixth Semester) EXAMINATION, 2006

(Computer Science)

COMPILER CONSTRUCTION

(CS – 604)

Time : Three Hours]

[Maximum Marks : 100

Note : Attempt any five questions.

1. (a) Explain different phases and passes of a compiler. 10
(b) What are the various compiler-writing tools ? 10
2. (a) Explain lexical analysis with example. 10
(b) Implement the following statements through compiler view for different phases : 10
while $A > B$ & $A \leq 2 * B - 5$ do $A := A + B$
3. (a) Define context free grammars with example. 7
(b) What are the capabilities of cfg ? 6
(c) Define ambiguity with example. How can you eliminate ambiguity ? 7
4. (a) Differentiate between shift reduce parsing and top down parsing with example. 10
(b) Explain the difficulties with top-down parsing. 5

P. T. O.

[2]

(c) Consider the grammar :

$S \rightarrow iCtSS'/a$

$S' \rightarrow eS/\epsilon$

$C \rightarrow b$

Construct a predictive parsing table 5

5. (a) Define LR parser. What are the different techniques used for producing LR parsing tables ? 10
- (b) Write algorithm for predictive parser. 10
6. (a) Explain three address code, quadruples and triples with example. 15
- (b) Give the parse tree and translation for expression $(4*7 + 19)*2$ according to the syntax directed translation scheme. 5
7. (a) Implement a simple stack allocation scheme. 10
- (b) Explain syntactic and semantic errors with example. How can they be detected and recovered ? 10
8. Write short notes on the following : 20
 - (a) Bootstrapping
 - (b) Storage management
 - (c) Loop optimization
 - (d) Data structures for symbol tables