

END TERM EXAMINATION

SIXTH SEMESTER [B.TECH/M.TECH] MAY-JUNE 2013

Paper Code: IT-308

Subject: Compiler Design

Time : 3 Hours

Maximum Marks:60

Note: Attempt any five questions in all. Q.No.1 is compulsory.

Q1. Differentiate between-

(5*4=20)

- Context free grammar and context sensitive grammar
- Top-down parsing and bottom up parsing
- Pass1 and Pass 2 compiler
- Inherited and synthesis attributes

Q2. Show that the following grammar is ambiguous

(10)

$S \rightarrow iCtS \mid iCtScS \mid a$

$C \rightarrow b$

Write the unambiguous grammar for the same.

Q3. Explain with an example the predictive parser.

(10)

Q4.

- Write a LEX program to recognize the string $a^n b^n$.
- Explain the token generators and token recognizers. With an example.

(5)

(5)

Q5. Given the grammar

$S \rightarrow AA$

$A \rightarrow Aa \mid b$

- Construct sets of LR(1) items
- Construct canonical LR(1) parsing table

(5)

(5)

Q6.

- Explain the concept of syntax-directed definition.
- Obtain the directed acyclic graph for the expression $a+a*(b-c)+(b-c)*d$. also give the sequence of steps for constructing the same.

(5)

(5)

Q7. Discuss the issues in the design of code generator.

(10)

Q8. Write short notes on any two.

(5*2=10)

- Difficulties in lexical analysis.
- L- and S- attributes
- Peep hole optimisation
