

Computer Science & Engineering Department

I.I.T Kharagpur

Compilers: CS31003

Assignment

Max Marks: 25

Submission Date: 14th Nov, 2013

Answer all questions

1. Consider the grammar

$S \rightarrow Aa|bAc|dc|bda$

(10)

$A \rightarrow d$

Check whether the grammar is (a) SLR (b) LALR(1)

2. (a) Write the CFG for the C-like FOR loop structure. (10)

Assume that the start symbol is P and Non-terminal S depicts the different language constructs.

$P \rightarrow S$

$S \rightarrow \dots$

(b) Draw a short circuit diagram for the FOR loop and subsequently propose the semantic rules to generate three address code for the same.

3. Consider the CFG of expressions involving operator + and integer and floating point number (5)

$E \rightarrow E+T|T$

$T \rightarrow \text{num}.\text{num}|\text{num}$

Design a SDD to determine the type information of each term T and expression E