53 (CS 601) CPDG

2019

COMPILER DESIGN

Paper : CS 601

Full Marks : 100

Time : Three hours

The figures in the margin indicate full marks for the questions.

Answer ***all*** *questions.*

1. Consider the following grammar—

$S \rightarrow SaAB|d, A \rightarrow aA|a, B \rightarrow b$

(a) Construct the LR(1)items set.

(b) Create the Canonical LR(1) parsing table.

(c) Is it possible to create LALR(1) parsing table ? If your answer is yes then create it, otherwise justify why it is not possible.

Contd.

(d) Check whether the string daaab can be accepted by the canonical LR parser.

15+15+10+10

2. Consider the following regular expression

$$(xy)^* z (x+y).$$

(a) Create an NFA using MYT algorithm.

(b) Convert the NFA to its equivalent DFA.

(c) Minimize the states of your DFA.

5+10+5

3. Write a Yacc program suitable for a desktop calculator. The calculator can perform the following operations :

(a) addition

(b) subtraction

(c) multiplication

(d) division

(e) GCD

(f) factorial and

(g) power. 20

4. Write short notes on : ***(any two)*** 5+5

(a) Left recursion

(b) Dead code elimination

(c) Building blocks

(d) DAG.