53 (CS 601) CPDG

2017

COMPILER DESIGN

Paper : CS 601

Full Marks : 100

Time : Three hours

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

Answer Question No. **1** *and* ***any three*** *from the rest.*

1. Consider the following grammar

$P' \to P$, $P \to A + B \mid B$, $D \to \{P\} \mid id$,

$B \to B - D \mid D$

(a) Compute the LR (O) items for the above grammar.

(b) Construct a SLR parsing table using those LR (O) items.

(c) Check whether $\{id - id + id\}$ will be accepted by the parser.

15+15+10

2. Consider the following grammar

$R' \rightarrow R,\ R \rightarrow PQ,\ P \rightarrow aP \mid b,\ Q \rightarrow mQ \mid n.$

Create the LR (1) items. 20

3. Consider the regular expression

$a^*\ (a \mid b)^*\ (ab)^*$

(a) Design a NFA for the expression.

(b) Convert your NFA to a equivalent DFA. 20

4. With an example discuss the different phases of compiler design. 20

5. Consider the following expression

$a+b+(a+b+(a+b+(a+b)+(a+b+c)))$

(a) create a DAG for the above expression

(b) write the three address code from the DAG

(c) represent your three address code in quadruples and triples format.

5+5+10
