

APRIL/MAY 2019

MCS21 — COMPILER DESIGN

Time : Three hours

Maximum : 75 marks

SECTION A — (5 × 6 = 30 marks)

Answer ALL questions.

1. (a) Draw the NFA for aa^*/bb^* .

Or

- (b) What are the algebraic laws obeyed by Regular Expression? Explain.

2. (a) Write short notes on predictive parser.

Or

- (b) Discuss about the parser generator YACC.

3. (a) Write short notes on Recursive Evaluators.

Or

- (b) How will you eliminate left recursion? Explain.

4. (a) Discuss about dangling references.

Or

- (b) Elaborate on Quadruples.

5. (a) Give a brief note on Structure-Preserving Transformation

Or

- (b) What are the steps used in Peephole optimization?

SECTION B — ($3 \times 15 = 45$ marks)

Answer any THREE questions.

6. Write an algorithm to construct DFA from NFA.
7. Construct the action and goto table for the following grammar using SLR parser.

$E \rightarrow E * B$

$E \rightarrow E + B$

$E \rightarrow B$

$B \rightarrow 0$

$B \rightarrow 1$

8. Discuss about Type checking.

9. Explain the various implementations of Three-Address Statement.

10. Give a brief note on the DAG representation of Basic Blocks.