

NOVEMBER/DECEMBER 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) Write the algorithm to minimize the number of states of DFA.

2. (a) What is Top down parsing? Explain.

Or

- (b) Elaborate on LR parsers.

3. (a) What is a syntax tree? Construct a syntax tree for if-then-else.

Or

- (b) Discuss about Type Checking.

4. (a) Write short notes on Symbol Table.

Or

- (b) Describe Backpatching.

5. (a) What are basic blocks? Write the algorithm for constructing basic blocks.

Or

- (b) Explain peephole optimization.

SECTION B — (3 × 15 = 45 marks)

Answer any THREE questions.

6. Write the algorithm to convert Regular Expression to NFA. Explain with an example.
7. Elaborate on Predictive Parsers.
8. How will you assign space at compiler construction time? Explain.
9. Describe Dynamic Storage Allocation Techniques.
10. Give a brief note on DAG representation of basic blocks.

