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Roll No

MCADD-704 (2)

M.C.A. (Integrated) VII Semester

Examination, May 2022

Compiler Design

(Elective - I)

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.

ii) All questions carry equal marks.

1. a) What is a Compiler? Explain the role of Lexical Analyzer. 7
- b) Explain different phases of Compiler with suitable example. 7
2. a) Discuss the following 7
 - i) Left Recursion
 - ii) Recursive Descent parser
- b) State and Explain the rule used to compute first and follow functions with the help of 7
$$E \rightarrow E + T/T \quad T \rightarrow T * F/F \quad F \rightarrow F/a/b.$$
3. Construct SLR parser for the following grammar and check the acceptance of input string of your own 14
$$R \rightarrow R+|+R|RR|R^*|a|b.$$
4. a) Explain Semantic analysis with example. 7
- b) Explain how to generate three address codes with syntax directed definition with an example? 7

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5. What is meant by activation of procedure? How it can be represented with activation tree and record? Explain with quicksort example. 14
6. a) Differentiate synthesized and inherited attribute with Example. 7
b) What is an Abstract syntax tree? How to construct it? Explain with it syntax directed definition. 7
7. a) Explain peephole optimization. Explain its characteristics. 7
b) Explain how copy propagation can be done using data flow equation? 7
8. Write a short notes on the following 14
a) Common sub expression elimination
b) Dead code elimination
c) Constant folding
d) Induction variable elimination and Strength reduction
