

Madras University

M.C.A Principles of Computer Design Question paper

Time: Three hours

Maximum: 75 marks

PART A - [5 x 5 = Marks 25]

Answer ALL questions.

All questions carry equal marks.

1. (a) Define the term : Regular Expression with an example.

Or

(b) What is the function of Lexical Analyser? Give example.

2. (a) Distinguish between Top-down and Bottom-up Parsing Techniques.

Or

(b) Define the term : Handle Pruning with example.

3. (a) What is meant by Syntax Directed Translation Scheme?

Or

(b) Describe the Hash Table Structure of a Symbol Table.

4. (a) What is meant by Reduction in Strength? Give an example.

Or

(b) What is DAG? Give an example.

5. (a) What are the problems in Code Generation?

Or

(b) What are the sources of Error? Give examples.

PART B - [5 x 10 = Marks 50]

Answer any FIVE questions.

All questions carry equal marks.

6. Discuss in detail, the approach to the design of Lexical Analyser with ex ample.

7. With a block diagram, explain the various phases of a compiler.

8. Construct the Predictive Parsing Table for the grammar:

$S \rightarrow A a / b$

$A \rightarrow A c / S d /$

and Parse the String CCa using the above table.

9. Explain the algorithm for constructing SLR Parsing Table with an example.

10. Translate the expression $-(a+b) * (c+d) + (a+b+c)$ into

(a) Quadruples

(b) Triples

(c) Indirect triples.

11. Describe about Loop Optimization Techniques with examples.

12. Explain in detail, Code Generation Algorithm using example.

13. Explain how error recovery can be performed in Shift-Reduce Parsing.