Code No: 115AP

R13

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year I Semester Examinations, May - 2018

COMPILER DESIGN

(Computer Science and Engineering)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART - A

(25 Marks)

1.a) What are the two parts of a compilation? Explain briefly. [2]
b) Define a context free grammar. [3]
c) List the properties of LR parser. [2]
d) Write short notes on YACC. [3]
e) What are the various types of intermediate code representation? [2]
f) Give the format of symbol table [3]
g) List the terminologies used in basic blocks. [2]
h) What is a flow graph? [3]
i) Mention the properties that a code generator should possess. [2]
j) What is a DAG? Mention its applications. [3]

PART - B

(50 Marks)

2. Explain in detail about the role of Lexical analyzer with the possible error Recovery actions. [10]

OR

3. Construct Predictive parsing table for the following grammar: the necessary algorithm.
S > (L)/ a
L > L, S/S and check whether the (a, a) belong to that grammar or not. [10]

4. Give the LALR parsing table for the grammar. [10]
S -> L = R / R L -> * R / id R -> L

OR

5. Compare and contrast between SLR, LALR and LR parses. [10]

6. How would you generate the intermediate code for the flow of control statements? Explain with examples. [10]

OR

7. Explain how the types and relative addresses of declared names are computed and how scope information is dealt with. [10]

8. Write about Data flow analysis of structural programs. [10]

OR

9. Explain the principle sources of optimization in detail. [10]

10. Give an example to explain in detail about machine dependent code optimization. [10]

OR

11. Describe how DAG can be used in register allocation process? Give examples. [10]

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