SL - 1017

Total No. of Pages : 2

Seat No.	

T.E. (CSE) (Prat - VI) (Semester - VI) Examination, April - 2017
COMPILER CONSTRUCTION (New)
Sub. Code : 66858

Day and Date : Wednesday, 26 - 04 - 2017 **Total Marks : 50**

Time : 02.00 p.m. to 04.00 p.m.

Instructions:
1) **All questions are compulsory.**
2) **Figures to the right indicate full marks.**

SECTION - I

Q1) a) Explain how to recognize the tokens. **[4]**

b) Consider the following grammar

$S \rightarrow CC$

$C \rightarrow cC$

$C \rightarrow d$

Find the canonical collection of sets of LR(1) items and construct the action goto table. **[6]**

Q2) a) List and explain various compiler construction tools. **[4]**

b) Write the code for recursive descent parser for the following grammar.

$S \rightarrow AbS$

$A \rightarrow a \mid da$ **[6]**

OR

b) What are conflicts in Shift-Reduce parser? Explain with the help of an example. **[6]**

Q3) What is Left recursion? Explain elimination of left recursion with example. **[5]**

OR

Explain input buffering in Lexical analysis. Give an example lexeme involving exactly two l's for the given pattern: (0l+21+02)*(1+ ^) (1+ 22) **[5]**

P.T.O.

SECTION - II

Q4) a) Give

i) Syntax Tree

ii) DAG for the expression a+ a*(b-c) + (b-c)*d **[4]**

b) What is syntax directed definition? Explain the construction of syntax tree for Expressions using syntax directed definitions with the help of an example. **[6]**

OR

b) Write an SDD to show how backpathching can be used to generate three address code for Boolean expressions and flow-of-control statements and explain. **[6]**

Q5) a) Using code generation algorithm, generate the target code for the expression a = (a-b) + (a-c) + (a-c). Also show the values of Register descriptor and address descriptor as code generation progresses. **[4]**

OR

a) Explain optimization of basic blocks. **[4]**

b) What is peephole optimization? Describe different transformations that are characteristics of Peephole Optimization. **[6]**

Q6) With reference to code generation, what is basic block? Describe an algorithm to partition, three address sequences into basic blocks. **[5]**

OR

Explain Loops in flow graphs. **[5]**

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SUK-SDG