

Code No: **R31051**

R10

Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2017

COMPILER DESIGN

(Computer Science and Engineering)

Time: 3 hours

Max. Marks: 75

**Answer any FIVE Questions
All Questions carry equal marks**

- 1 Describe the output for the various phases of compiler with respect to the following statements $count = count * 2 + count * 2$. [15M]
- 2 a) Why is buffering used in lexical analysis? What are the commonly used buffering methods? [7M]
b) Construct the minimized DFA for the regular expression $(0+1)^*(0+1)$ [8M]
- 3 What are the key problems with top down parser? Write recursive descent parser for the grammar:
 $S \rightarrow cAd$
 $A \rightarrow abla$ [15M]
- 4 Construct a SLR parser for the following grammar: [15M]
 $Stmts \rightarrow Stmt$
 $Stmts \rightarrow Stmts ; Stmt$
 $Stmt \rightarrow Var = E$
 $Var \rightarrow id [E]$
 $Var \rightarrow id$
 $E \rightarrow id (7) E \rightarrow (E)$
Show the moves of the parser on a valid and an invalid string.
- 5 a) Describe various steps in the construction of LALR parser. Explain reduce-reduce conflict with an example. [8M]
b) How to handle the errors in LR parsing? Explain with an example. [7M]
- 6 Write syntax directed translation to translate the following statements into three address code. [15M]
i) if ii) Ifelse iii) while and iv) for statements
- 7 a) What are the different loop optimization methods? Explain them with examples. [8M]
b) What is an activation record? Explain how it is relevant to the intermediate code generation phase with respect to procedure declarations. [7M]
- 8 a) What is the use of DAG in code optimization? Explain with an example. [7M]
b) What is the optimization technique applied on procedure calls? Explain with an example. [8M]
