

**R09****Code: 9A05504**

B.Tech III Year I Semester (R09) Supplementary Examinations December 2015

**COMPILER DESIGN**

(Computer Science and Engineering)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions  
All questions carry equal marks

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- 1 (a) Write the differences between compiler and interpreter.  
(b) Describe the implementation of a lexical analyzer.
- 2 (a) What are the advantages of top down parsing?  
(b) Consider the grammar:  
 $S \rightarrow CAd$   
 $A \rightarrow aB$   
 $B \rightarrow b|\epsilon$   
And verify whether Cad is accepted by the language defined by the above grammar.
- 3 (a) State whether  $E \rightarrow E+E|E*E|(E)|id$  is operator precedence grammar or not. Explain why.  
(b) Consider the grammar:  
 $S' \rightarrow Sc$   
 $S \rightarrow SA|A$   
 $A \rightarrow aSb|ab$   
What are the viable prefixes?
- 4 (a) Define S-attributed and L-attributed grammars.  
(b) Write a syntax directed definition to convert the given binary number into decimal equivalent.
- 5 (a) Explain the reusability concept of symbol table space.  
(b) What do you mean by coercion? Explain any one advantage of it.
- 6 What do you understand by code optimization? Write the algorithm to partition the 3 address code into basic blocks.
- 7 How to calculate the amount of Data-Flow information? Explain.
- 8 (a) Give an efficient algorithm for register allocation.  
(b) Explain the issues in the design of code generator.

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