

Code No: 07A60502

**R07**

**Set No. 2**

III B.Tech II Semester Examinations, December 2010

COMPILER DESIGN

Computer Science And Engineering

Time: 3 hours

Max Marks: 80

Answer any FIVE Questions  
All Questions carry equal marks

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1. Explain how storage allocation is done for arrays, strings and records? [16]
2. (a) Write about the issues in the design of code generator.  
(b) Write about target code forms. Explain how the instruction forms effect the computation time. [8+8]
3. Define the following terms.  
(a) Reaching definition.  
(b) Live variables.  
(c) Flow graphs.  
(d) Global optimization. [16]
4. (a) Construct operator precedence parse table for the below grammar.  
 $S \rightarrow iEtS|iEtSeS|a$   
 $E \rightarrow b|c|d$ .  
(b) Eliminate Ambiguity for above grammar. [10+6]
5. (a) Translate the following code segment into Quadruples.  
While  $A < C$  and  $B < D$   
if  $A=1$  then  $C:= C+1$   
else while  $A \leq D$  do  $A:= A+2$   
(b) Explain the different statements allowed in TAC with examples. [8+8]
6. (a) Write the procedure for constructing the DAG.  
(b) For the following basic block construct DAG.  
 $d = b * c;$   
 $e = a * b;$   
 $b = b + c;$   
 $c = b * c;$  [8+8]
7. (a) Construct an NFA for regular expression  $R = (aa/b)^*ab$  convert it into an equivalent DFA  
(b) Write a LEX program for identifying the keywords and identifiers from the file? [8+8]
8. Give the algorithm to generate the canonical collection of LR(0) items. [16]

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