

Code No: 56031

R09

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B. Tech III Year II Semester Examinations, October/November - 2016

COMPILER DESIGN

(Computer Science and Engineering)

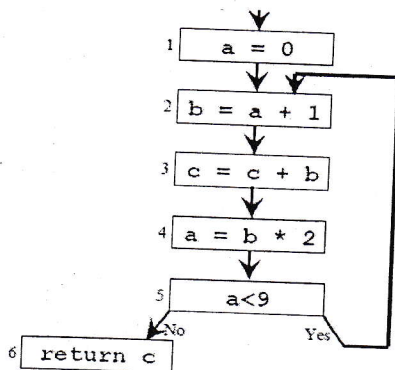
Time: 3 hours

Max. Marks: 75

Answer any five questions

All questions carry equal marks

- 1.a) Explain in detail about the role of lexical analyzer with the possible error recovery actions.
- b) Show how lexical analyzer is constructed using LEX? Develop a LEX program for token recognizer. [8+7]
2. Construct the predictive parser for the following grammar.
 $E \rightarrow E+T \mid T, T \rightarrow T*F \mid F \rightarrow (E) \mid id.$ [15]
3. Construct a CLR Parsing table for the following grammar
 $S \rightarrow CC, C \rightarrow cC \mid d$ [15]
4. Generate intermediate code for the following code segment along with the required syntax directed translation scheme:
i=1; s=0;
while(i<=10)
 s=s+a[i][i]
 i=i+1 [15]
- 5.a) With a neat diagram explain the format of symbol table.
- b) Discuss in detail about the tree structures representation of scope information. [8+7]
- 6.a) Construct the dag for the following basic block.
d: =b*c
e: = a +b
b: =b*c
a: =e-d
- b) Write short notes on next-use information with suitable example. [8+7]
7. Explain the Live variable analysis for the following control flow graph. [15]



8. Explain the procedure to perform register allocation and assignment with graph coloring. [15]