Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

IT-6004 (CBGS)

B.E. VI Semester

Examination, May 2018

Choice Based Grading System (CBGS)

Compiler Design

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any five questions.
ii) All questions carry equal marks.

1. a) What is token and keywords. How many tokens generated in the following C statements.
printf ("x = %d", X);
b) Explain LEX tool with the help of any example.

2. a) Consider the grammar
$S \rightarrow AaB, A \rightarrow aB|A, B \rightarrow bA|a$
whether it is LL(1) grammar or not
b) Construct a parse tree for the string (a, (a, a)). Set a be the grammar
$S \rightarrow (L)|a \quad L \rightarrow L, S|S$

3. Construct an LR (1) parsing table for the following grammar
$S \rightarrow Aa|bAC|Bc|bBa$
$A \rightarrow d$
$B \rightarrow d$

4. Differentiate between synthesized and inherited translation attributes. For given grammar, construct annotated parse tree and dependency graph to evaluate input strings 2#3 & 5#6 & 4.
$E \rightarrow E\#T \{E.val = E.val \& T.val\}$
$E \rightarrow T \{E.val = T.val\}$
$T \rightarrow T\&F \{T.val = T.val \& F.val\}$
$T \rightarrow F \{T.val = F.val\}$

5. a) Differential between Topdown parser and bottomup parser.
b) Translate the following expression to quadralae, triple and indirect triple
– (a+b) & (c+d) – (a+b+c).

6. a) Explain dynamic and static storage allocations?
b) Explain basic blocks and flow graphs?

7. What is DAG? What are the advantage of DAG? Construct the DAG for the following basic block.
D = B & C, E = A + B, B := B & C, A := E – D.

8. Write a short notes (any three)
i) Code optimization
ii) Boolean expression
iii) Dependency graph
iv) Symbol table management

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