SHAHEED BHAGAT SINGH STATE TECHNICAL CAMPUS, FEROZEPUR

ROLL No: | | | | | | | | | | | | | **Total number of pages:[1]**

B.Tech. || CSE || 6th Sem

Compiler Design

Subject Code: BTCS – 601A (RG)

Paper ID: M|18

(2015 batch)

Time allowed: 3 Hrs **Max Marks: 60**

Important Instructions:

- **All questions are compulsory**
- **Assume any missing data**

PART A (10x 2marks)

Q. 1. Short-Answer Questions:

a) What is the role of Automata in Lexical Analyzer?
b) What is Abstract Syntax Tree (AST)?
c) What is LALR?
d) How can you differentiate a Global variable from a Local having same name?
e) What are Triples?
f) What is Type Casting?
g) What is DAG?
h) What is Peephole optimization?
i) How a STACK is different from HEAP?
j) What is a Lexeme?

PART B (5×8marks)

Q. 2. What is Syntax Analysis? Give an example of a Syntax tree. CO 1

OR

What is CFG? Give an example of an ambiguous Grammar. CO 1

Q. 3. Take an example of any C++ program and convert it into various tokens. Use various data structures as applicable in the Lexical Analysis Phase. CO 2

OR

What is Lexical Analysis? Explain the working of a Lexical Analyzer. CO 2

Q. 4. What is Top Down Parsing? Explain with the help of an example. CO 3

OR

Computer FIRST and FOLLOW for the following grammar: CO 3

$E \rightarrow TE'$, $E' \rightarrow +TE' \mid \varepsilon$, $T \rightarrow FT'$, $T' \rightarrow *FT' \mid \varepsilon$, $F \rightarrow (E) \mid id$

Q. 5. Write down the Triples, Quadruples and Indirect Triples for the expression: $f = a * b + c * d + e \uparrow f$ CO 4

OR

What are S-attributed Definitions? Also, explain L-attributed Definitions. CO 4

Q. 6. Explain various Machine independent code optimization techniques. CO 5

OR

Explain various issues involved in a code generation phase. CO 5