Seat No.

Set **P**

B.Sc. (ECS) – III (Semester – VI) (CGPA) Examination, 2018
COMPILER CONSTRUCTION (Paper – IV)

Day and Date : Thursday 1-11-2018   Max. Marks : 70
Time : 10.30 a.m. to 1.00 p.m.

Instructions : 1) **All** questions are **compulsory**.
                          2) Figures to the **right** place indicate **full** marks.

1. Choose the correct alternative :   **14**

    1) The source program into a sequence of atomic unit called _____
        a) Identifier   b) Token
        c) Keywords   d) None

    2) A _____ reads the input one character at a time.
        a) Lexical analyzer   b) Parser
        c) Symbol table   d) None

    3) A _____ describes the hierarchical structure of programs.
        a) Lexical analyzer   b) Syntax tree
        c) Grammar   d) None

    4) _____ are data structures that hold information about identifiers.
        a) Tokens   b) Parser
        c) Lexical Analyzer   d) None

    5) The set of words or strings of characters that match a given pattern is called a
        a) Language   b) Lexeme
        c) Regular definition   d) None

    6) A _____ takes as input tokens from the lexical analyzer.
        a) Parser   b) Syntax directed translation
        c) Code generation   d) None

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7) A _____ attribute at a parse tree node is computed from attributes at its children.

   a) Inherited   b) Synthesized

   c) Both   d) None

8) Procedure calls and returns are usually managed by a run time stack called the

   a) Heap   b) Stack Allocation

   c) Control Stack   d) None

9) _____ is the final phase of a compiler.

   a) Code generation   b) Run time

   c) Both   d) None

10) A _____ is a graphical representation of a program in which the nodes of the graph are basic block and edges show flow.

    a) Flow graph   b) Loop

    c) DAG   d) None

11) Three address code is sequence of statements of Z = op Y.

    a) True   b) False

12) Code generator is not phase of compiler.

    a) True   b) False

13) By value is one type of parameter passing technique.

    a) True   b) False

14) Retract( ) used to retract lookahead pointer one character.

    a) True   b) False

2. Attempt **any seven** of the following :   **14**

   1) What is Intermediate code generation ?

   2) Explain regular definitions.

   3) Consider CFG given below.

      S → aAb

      A → aA|Bb

      B → b

      Solve input "aabbb" using Handle of shift reduce parser.

4) What is L-attributed definition ?

5) Explain Stack Allocation.

6) What is the definition of Backpatching ?

7) Explain flow graph.

8) What is copy propagation ?

9) Explain left recursive.

3. A) Attempt **any two** of the following : **10**

    1) Explain Predictive parser. Construct the following grammar.

       $S \rightarrow AB| \in$

       $A \rightarrow aAB| \in$

       $B \rightarrow bA$

    2) Write a note on Parameter passing.

    3) Explain loops in flow graph with example.

  B) Explain Input Buffering. **4**

4. Attempt **any two** of the following : **14**

    1) Explain phases of a compiler.

    2) Write a note on source language issues.

    3) Design and implementation of lexical analyzer explain with suitable example.

5. Attempt **any two** of the following : **14**

    1) Explain Run time storage management.

    2) What is Bottom-up parser ? How to implement shift reduce parser ? Solve the given example using Handle pruning.

       $S \rightarrow xPy$

       $P \rightarrow xP|Qy$

       $Q \rightarrow y$

    3) Explain construction of Syntax tree with example.

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