

Class: I PG
Course: Computer Science

Time : 3 Hours
Max. Marks : 60

17MCSC02 Principle of Compiler Design

Part A

[10 * 1/2 = 5]

Choose the Correct Answer

- _____ is a program that reads a program written in one language which can translate it into an equivalent program in another language.
a) Compiler b) source program c) target program d) translation
- _____ is a sequence of characters that can be treated as a single logical entity.
a) symbol b) Token c) lexeme d) pattern
- _____ is a simple idealized machine used to recognize patterns within input taken from some character set.
a) A finite automata b) precedence function
c) Context-sensitive grammars d) Context-free grammars
- A _____ can be diagrammatically represented by a labeled directed graph
a) DFA b) NFA c) Tokens d) Syntax tree
- A _____ is a program that matches the terminal symbols against the input by maintaining a stack rather than using recursive calls.
a) non-recursive predictive parser b) recursive predictive parser
c) Context free d) Finite Automata
- _____ the position of activation record is stored in register so words in activation records can be accessed as offsets from the value in this register.
a) In stack allocation b) In dynamic allocation
c) In static allocation d) In activate allocation
- The _____ is the most general non-backtracking shift-reduce parsing method.
a) Shift – reduce b) LR parsing c) SLR Parsing d) Recursive descent
- _____ contains sequence of consecutive statements, which may be entered only at the beginning and when it is entered it is executed in sequence without halt.
a) target b) basic block c) Symbol table d) Leader
- A DAG basic block is a _____.
a) Directed Acyclic Graph b) Directed Asynchronous Gap
c) Deterministic Asynchronous Graph d) Directed Acyclic Gap
- Relationships between basic blocks are represented by a directed graph called _____.
a) addition b) flow graph c) Data flow Analysis d) basic Blocks

Part B
Answer All Questions
Answer should not exceed 200 words or one page

5 X 4 = 20

11. a) Describe phases of compilers with an example.
(Or)
b) Illustrates the different types of grammars.
12. a) List the role of lexical analyzer
(Or)
b) Appraise the various parsing techniques.
13. a) Describe about left recursive algorithm.
(Or)
b) Discuss the components of LR parsers.
14. a) Stress the significant of using symbol table in compiler design.
(Or)
b) Analyse the syntactic errors.
15. a) Formulate the sources of optimization and explain.
(Or)
b) Describe peephole optimization.

Part C
Answer All Questions
Answer should not exceed 600 words or three pages

5 X 7 = 35

16. a) Explain briefly about ambiguous grammar.
(Or)
b) Discuss about regular expression in detail.
17. a) Describe to construct Finite automata from regular expression.
(Or)
b) Discuss about shift reducing parsing.
18. a) Describe predictive parser and give an algorithm for construct the table .
(Or)
b) Explain SLR parser and constructing the table.
- 19.a) List and explain any two data structure used in symbol table.
(Or)
b) Appraise lexical phase error.
- 20a) Prepare a procedure of DAG construction.
(Or)
b) Design a code generation algorithm.
