



CS606-Compiler
Construction
(Solved Macq's)
LECTURE FROM
(23 to 45)



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1. ____ convert the relocatable machine code into absolute machine code by linking library and relocatable object files.
 - Assembler
 - **Loader/link-editor**
 - Compiler
 - Preprocessor
2. Parsers take __ as input from lexical analyzer.
 - Linker
 - **Token**
 - Instruction
 - None of the given
3. The regular expression _ denotes, the set of all strings of a's and b's of length two
 - a^*
 - $(a^*|b^*)^*$
 - $(a^*b^*)^*$
 - **$(a|b)(a|b)$**
4. _____ is a regular expression for the set of all strings over the alphabet $\{a\}$ that has an even number of a's.
 - **aa^***
 - $(aa)^*$
 - aa^*a
 - $a(aa)^*$
5. _____ Phase supports macro substitution and conditional compilation.
 - Semantic
 - Syntax
 - **Preprocessing**
 - None of given
6. In LL(1) parsing algorithm, _ contains a sequence of grammar symbols.
 - **Stack PG # 62**
 - Link List
 - Array
 - None of the given.
7. Consider the grammar

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$A \rightarrow B C D$

$B \rightarrow h B | \epsilon$

$C \rightarrow C g | g | C h | i$

$D \rightarrow AB | \epsilon$

First of A is _____.

- h, g, i
- g
- h
- None of the given.

8. _____ parsers never shifts into an error state.

- LS
- LT
- LR
- LP

9. In parser, the two LL stand for__.

- Left-to-right scan of input
- left-most derivation
- Left-to-right scan of input and left-most derivation
- None of the given

PG # 54

10. _____ is elaborated to produce bindings.

- Declaration
- Expression
- Command
- None of the given

11. _____ A lexical analyzer generated by _____ is essentially a FSA.

- Dex
- Mex
- Fex
- Lex

12. A lexical analyzer generated by lex is essentially a PDA (Push Down Automaton).

- True
- False

13.

T

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The actions (shift, reduce) in a SLR(1) parser depend on a look ahead symbol (_____)

- Current input token
- Next Input Token
- Previous output Token
- Previous Input Token.

14. The following grammar contains a conflict. $S \rightarrow A \mid xb$

- Shift-Reduce
- First-Reduce
- Shift-First
- Reduce-Reduce

15. $S \rightarrow A \mid xb$
 $A \rightarrow aAb \mid x$
This grammar contains a _____ conflict.

- Shift-Reduce
- First-Reduce
- Shift-First
- Reduce-Reduce

16. Consider the Following
 $S \rightarrow AB$

- 1
- 2
- 3
- 4

17. _____ is a register allocation technique that *always* finds the minimal number of registers needed for a procedure.

- Dangling reference
- Graph coloring
- Left Factoring
- Right Recursion

18. Graph coloring is a register allocation technique that operates at *individual* basic blocks.

- True
- False

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19. Graph coloring is a register allocation heuristic that *usually* finds the minimal number of registers needed for a procedure.

- True
- False

20. $S \rightarrow a S \mid Sa \mid c$

This grammar is ambiguous.

- True
- False

21. When generating code at the basic block level, the dependency graph must be converted to target code. By identifying instruction selection and instruction ordering can be performed efficiently in a single pass.

- Ladder sequences
- Physical sequences
- Logical sequences
- Token sequences

22. _____ can be considered a small compiler since it transforms a source language (assembly) into a less abstract target language (binary object code)

- Parser
- Assembler
- Lexical analyzer
- Scanner

23. When memory allocator operates on chunks which include some administrative part and a block of user data. The administrative part includes _____ flag for marking the chunk as free or in-use.

- One
- Two
- Three
- Four

24. _____ parser transforms a stream of tokens into an _____.

- AST

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- IST
- EST
- ATS

25. The parser generator yacc can handle _____ grammars

- LL(1)
- LT(1)
- LS(1)
- LF(1)

26. The parser generator yacc can handle LL(1) grammars.

- True
- False

27. The yacc parser generator can handle LALR(1) grammars.

- True
- False

28. Simple code generation considers one AST node at a time. If the target is a *register* machine, the code can be generated in one __ traversal of the AST, possibly introducing temporaries when running out of registers.

- Depth-first
- Breadth-first
- Depth-second
- Breadth-second

29. A linker combines multiple object files into a _____ executable object.

- Single
- Double
- Triple
- Quadruple

30. The notation _____ instructs YACC to push a computed attribute value on the stack.

- \$\$ PG # 106
- &&
- ##
- --

31. The following two items

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$A \rightarrow P \cdot Q$

$B \rightarrow P \cdot Q$

can co-exist in an ___ item set

- LR
- LS
- LT
- PR

32. When generating a lexical analyzer from a _____ description, the item sets (states) are constructed by two types of “moves”: character moves and ϵ moves.

- Character
- Grammar
- Token
- Sentence

33. Hybrid IRs combine elements of _____

- Graphical (structural)
- Linear IRs
- Both graphical and linear IRs PG # 108
- Non-Linear IRs

34. $x[i] = y$ This is _____.

- Prefix assignment
- Postfix assignment
- Index assignment PG # 115
- Non-Index assignment

35. A lexical analyzer generator automatically constructs a _____ that recognizes tokens.

- FA PG # 18
- PDA
- DP
- Unidirectional Graph

36. if x relop y goto L Above statement is _____

- Abstract jump

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- Conditional jump PG # 115
- While loop
- Unconditional jump

37.I

In a CFG (Context Free Grammar) the set of terminal and non-terminal symbols must be.

- Disjoint
- Logical
- Relational
- Joint

38. $S \rightarrow a | B$
 $B \rightarrow Bb | \epsilon$

The non-terminal B is left recursive.

- True
- False

39.

YACC contains built-in support for handling ambiguous grammars resulting in conflicts.

- Shift-reduce
- Shift-Shift
- Reduce-reduce
- Reduce-Shift
- Segment-directed

43. When constructing an LR(1) parser we record for each item exactly in which context it appears, which resolves many conflicts present in parsers based on FOLLOW sets.

- SLR(1)
- LRS(1)
- RLS(1)
- SLL(1)

44. Code generation module has to tackle _____.

- Memory management
- Instruction selection
- Instruction scheduling
- All of the given PG # 129

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45. For convenience, lexical analyzers should read the complete program into memory.

- Input
- Output
- Input and output
- Tokens

40. Considering the following grammar:

$S \rightarrow A \mid x$

$A \rightarrow aAb \mid x$

The grammar contains a ___ conflict.

- Reduce-reduce
- First-first
- Shift-shift
- Shift-reduce

41. SLR (1) parsers only reduce a production rule when the current input token is an element of the FOLLOW set of that rule.

$S \rightarrow A B$

$A \rightarrow \epsilon \mid aA$

$A \rightarrow b \mid bB$

- FOLLOW (A) contains 2 elements.

- True
- False

42. SLR (1) parsers only reduce a production rule when the current input token is an element of the FOLLOW set of that rule.

$S \rightarrow A B$

$A \rightarrow a \mid aA$

$B \rightarrow \epsilon \mid bB$

- FOLLOW (A) contains 2 elements.

- True
- False

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43. The order in which the DAG is traversed can lead to _____ code

- Better PG # 143
- Worse
- Large
- Garbage

44. Register allocation problem uses the strategy of _____.

- Graph coloring PG # 144
- Graph nodding
- Graph edging
- Graph patching

48. Typical compilation means programs written in high-level languages to low-level

- Object code PG # 06
- Byted code
- Unicode
- Object code and byte code

45. In compilation process, Hierarchical analysis is also called_.

- Parsing
- Syntax analysis.
- Parsing and syntax analysis
- None of the given

46. IR (Intermediate Representation) stores the value of its operand in_____.

- Registers PG # 10
- Memory
- Hard disk
- None of the given

47. exeme is a sequence of characters in the source program that is matched by the pattern for a.

- Linker

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- **Token**
 - Control flow
 - None of the given
48. _____ Parsers take ___ as input from lexical analyzer.

- Linker
 - **Token**
 - Instruction
 - None of the given
49. What kind of abstract machine can recognize strings in a regular set?

- **DFA**
 - NFA
 - PDA
 - None of the given
53. In DFA minimization, we construct one ___ for each group of states from the initial DFA.

- **State PG # 30**
 - NFA
 - PDA
 - None of the given
50. _____ (Lexical Analyzer generator), is written in java.

- Flex
 - **Jlex PG # 31**
 - Complex
 - None of the given
51. _____ In Flex specification file, different sections are separated by _____.

- **%% PG # 31**
 - &&
 - ##
 - None of the given
52. _____ Recursive ___ parsing is done for LL(1) grammar.

- **Decent**
- Ascent

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- Forward
- None of the given

56. Alternative of the backtrack in parser is Look ahead symbol in__.

- **Input**
- Output
- Input and output
- None of the given

53. Parser takes tokens from scanner and tries to generate _____

- Binary search tree
- **Parse tree**
- Binary search tree and parse tree.
- None of the given

54. In predictive parsing table, the rows represents _____.

- Terminals
- Both non-terminal and terminal
- **Non-terminal PG # 62**
- None of the given

55. A predictive parser is a top-down parser.

- **True**
- False

56. In LL(1) parsing algorithm, contains a sequence of grammar symbols.

- **Stack PG # 62**
- Link list
- Array
- None of the given

57. Bottom-up parsing uses only ___ kinds of actions.

- **Two PG # 71**
- Three
- Four
- Five

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58. Bottom-up parsers handle a class grammar.
- Large PG # 49
 - Small
 - Medium
 - None of the given
59. The shift action a terminal on the stack.
- Pushes PG # 73
 - Pops
 - Both push and pops
 - None of the given
60. Reduce action zero or more symbols from the stack.
- Pushes
 - Pops PG # 73
 - Both push and pops
 - None of the given
61. In compilers, linear analysis is also called _____.
- Lexical analysis
 - Scanning
 - Lexical analysis and scanning
 - None of the given
62. Back End of two-pass compiler algorithm uses _____.
- $O(n)$
 - $O(n \log n)$
 - NP Complete
 - None of the given
63. The Back End of a compiler consist of _____.
- Instruction selection
 - Register allocation

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- Instruction scheduling
- All of the given

64. _____ In

Back End module of compiler, optimal register allocation uses _.

- $O(\log n)$
- $O(n \log n)$
- NP-Complete
- None of the given

65.

lexeme is a sequence of characters in the source program that is matched by the pattern for a_.

- Linker
- Token
- Control flow
- None of the given

66. _____ is a regular expression for the set of all strings over the alphabets $\{a\}$ that has an even number of a's.

- aa^*
- $(aa)^*$
- aa^*a
- $a(aa)^*$

67. _____ algorithm is used in DFA minimization.

- James's
- Robert's
- Hopcroft's PG # 25
- None of the given

68. _____ is an important component of semantic analysis.

- Code checking
- Type checking PG # 39
- Flush checking
- None of the given

69. In_, certain checks are performed to ensure that components of a program fit together meaningfully.

- Linear analysis
- Hierarchical analysis
- Semantic analysis

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- None of the given
70. _____ read the input character and produce sequence of tokens as output.
- **Lexical analyzer**
 - Parser
 - Symbol table
 - None of the given
71. _____ of a two-pass compiler is consist of instruction selection, Register allocation and instructionscheduling.
- **Backend**
 - Frontend
 - Start
 - None of the given
72. _____ is evaluated to yield a value.
- Command
 - **Expression**
 - Declaration
 - None of the given
73. A parser transforms a stream of tokens into an AST (Abstract Syntax Tree).
- **True**
 - false
74. A parser transforms a stream of characters into a stream of tokens.
- True
 - **False**
75. A lexical analyzer transforms a stream of characters into a stream of tokens.
- **True**
 - False
76. $S \rightarrow a \mid A$
 $A \rightarrow Aa \mid a$
This grammar is ambiguous.
- **True**
 - False

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77. The regular expressions $(a+|b)?$ and $a+|b?$ describe the same set of strings.

- True
- False

78. The regular expressions $a^*|b^*$ and $(a|b)^*$ describe the same set of strings.

- True
- False

79. The regular expressions $a+a$ and a^*aa describe the same set of strings.

- True
- False

80. A lexical analyzer *generator* automatically construct a FSA (Finite State Automaton) that recognizes tokens. The generator is driven by a regular description

- True
- False

81. The transition table in a lexical analyzer records for each state (row) which token, if any, is recognized in that state. - For each token there may be more than one “recognizing” row in the table.

- True
- False

82. A recursive descent parser is based on a PDA (Push Down Automaton).

- True
- False

83. A bottom-up parser creates the nodes in the AST in pre-order.

- True
- False

84. A top-down parser creates the nodes in the AST (Abstract Syntax Tree) in preorder.

- True
- False

85. A _____ parser creates the nodes in the AST in preorder.

- Top – Down
- Bottom – Up

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- Middle – Ware
- Straight

86. The stack used in a bottom-up parser contains an alternating sequence of states and grammar symbols.

- **True**
- False

87. The following two items

$A \rightarrow P \cdot Q$

$A \rightarrow PQ \cdot$

Can coexist in an LR item set.

- True
- **False**

88. The Following two Items

$A \rightarrow x \cdot B$

$B \rightarrow \cdot y$

Can coexist in an LR item set.

- **True**
- False

89. The Following two Items

$B \rightarrow P \cdot P$

$B \rightarrow Q \cdot Q$

Can coexist in an LR item set.

- True
- **False**

90. $S \rightarrow A | xb$

$A \rightarrow aAb | x$

This is an LALR(1) grammar.

- **True**
- False

91. A linker combines multiple object files into a single executable object.

- **True**
- False

92. Data-flow equations can be solved efficiently by using bitwise boolean instructions (AND, OR, etc.).

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- True
- False

93. Data-flow equations operate with IN, OUT, GEN, and KILL sets.

- True
- False

94. When threading an AST it might be necessary to introduce additional (join) nodes to ensure that each language construct has a single exit point.

- True
- False

95. An iterative interpreter operates on a threaded AST.

- True
- False

96. $S \rightarrow A \mid B$

$A \rightarrow \epsilon \mid aA$

$B \rightarrow b \mid bB$

FIRST(S) contains _____ elements.

- 2
- 3
- 4
- None

97. The following set

$S \rightarrow \cdot A \mid \{ \$ \}$

$A \rightarrow \cdot a \mid \{ x \}$

$A \rightarrow \cdot aA \mid \{ x \}$

is a valid LR(1) item set

- True
- False

98. $S \rightarrow Ab$

$A \rightarrow Aa \mid \epsilon$

- True
- False

99. The regular expressions $a(b|c)$ and $ab|ac$ describe the same set of strings.

- True

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➤ False

100. $S \rightarrow a \mid B$

$B \rightarrow Bb \mid E$

The non-terminal ___ is left recursive.

➤

B

➤ a

➤ E

➤ None of the given

101. In PASCAL _____ represent the inequality test.

➤ :=

➤ =

➤ **<>**

➤ None of the given

102. In parser the two LL stand(s) for _____.

➤ Left-to-right scan of input

➤ left-most derivation

➤ **All of the given**

➤ None of the given

103. Consider the grammar

$A \rightarrow B C D$

$B \rightarrow h B \mid \text{epsilon}$

$C \rightarrow C g \mid g \mid C h \mid i$

$D \rightarrow AB \mid \text{epsilon}$

First of C is _____.

➤ **g, I**

➤ g

➤ h, i

➤ i

104. Three-address codes are often implemented as a ___.

➤ **Set of quadruples PG # 104**

➤ Set of doubles

➤ Set of Singles

➤ None of the given

105. What does following statement represent? $x[i] = y$

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- Prefix assignment
 - Postfix assignment
 - **indexed assignment PG #107**
 - None of the given
106. _____ convert the reloadable machine code into absolute machine code by linking library and reloadable objectfiles.
- Assembler
 - **Loader/link-editor**
 - Compiler
 - Preprocessor
107. Consider the following grammar,
- $$\begin{aligned} A &\rightarrow B C D \\ B &\rightarrow h B \mid \text{epsilon} \\ C &\rightarrow C g \mid g \mid C h \mid i \\ D &\rightarrow AB \mid \text{epsilon} \end{aligned}$$
- First of A is _____.
- **h, g, i**
 - g
 - h
 - None of the given
108. One of the core tasks of compiler is to generate fast and compact executable code.
- **True PG # 14**
 - False
109. Compilers are sometimes classified as.
- Single pass
 - Multi pass
 - Load and go
 - **All of the given**
110. In multi pass compiler during the first pass it gathers information about
- **Declaration**

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- Bindings
- Static information
- None of the given

111. We can get an LL(1) grammar by_____.

- Removing left recurrence
- Applying left factoring
- **Removing left recurrence and Applying left factoring**
- None of the given

112. Consider the following grammar, $S \rightarrow aTUE$ $T \rightarrow Tbc/b$ $U \rightarrow d$
And suppose that string “abcde” can be parsed bottom-up by the following reduction steps:

- (i) aTbcde
- (ii) aTde
- (iii) aTUE
- (iv) S

So, what can be a handle from the following?

- **The whole string, (aTUE) PG # 68**
- The whole string, (aTbcde)
- The whole string, (aTde)
- None of the given

113. When generating a lexical analyzer from a token description, the item sets (states) are constructed by two types of “moves”: character moves and _____ moves.

- **E (empty string) PG # 18**
- #
- @
- none of given

114. Which of the following statement is true about Two pass compiler.

- Front End depends upon Back End

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➤ Back End depends upon Front End PG # 5

➤ Both are independent of each other

➤ None of the given

115. avoid hardware stalls and interlocks.

➤ Register allocation

➤ Instruction scheduling PG #10

➤ Instruction selection

➤ None of given

116. Front end of two pass compiler takes _____ as input.

➤ Source code PG # 5

➤ Intermediate Representation (IR)

➤ Machine Code

➤ None of the Given

117. In Three-pass compiler _____ is used for code improvement or optimization.

➤ Front End

➤ Middle End PG # 10

➤ Back End

➤ Both Front end and Back end

118. _____ of a two-pass compiler is consists of Instruction selection, Register allocation and Instruction scheduling.

➤ Back end PG # 9

➤ Front end

➤ Start

➤ None of given

119. NFA is easy to implement as compared to DFA.

➤ True

➤ False PG # 19

120. In a transition table cells of the table contain the ___ state.

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- Reject state
- Next state PG #18
- Previous state
- None of the given

121. The regular expressions $a^*|b^*$ and $(a|b)^*$ describe the ____ set of strings.

- Same
- Different
- Onto

122. A canonical collection of sets of items for an augmented grammar, C is constructed as

- For each set I in C and each grammar symbol X where $\text{goto}(C, X)$ is empty and not in C add the set $\text{goto}(C, X)$ to C .
- The first set in C is the closure of $\{[S' \rightarrow \cdot S]\}$, where S' is starting symbol of original grammar and S is the starting non-terminal of augmented grammar. PG # 72
- The first set in C is the closure of $\{[S' \rightarrow \cdot S]\}$, where S is starting symbol of original grammar and S' is the starting non-terminal of original grammar.

123. The ____ translation statements can be conveniently specified in YACC

- Syntax-directed PG # 120
- Image-directed
- Sign-directed
- None of the given.

124. Attributes whose values are defined in terms of a node's own attributes, node's siblings and node's parent are called _.

- Inherited attributes PG # 92
- Physical attributes
- Logical attributes

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- Un-synthesized attributes
125. Consider the grammar

$$\begin{aligned} A &\rightarrow B C D \\ B &\rightarrow h B \mid \text{epsilon} \\ C &\rightarrow C g \mid g \mid C h \mid i \\ D &\rightarrow AB \mid \text{epsilon} \end{aligned}$$

Follow of B is_____.

- **h**
- g, h, i, \$
- g, i
- g

126. Consider the grammar $A \rightarrow B C D$

$$\begin{aligned} A &\rightarrow B C D \\ B &\rightarrow h B \mid \text{epsilon} \\ C &\rightarrow C g \mid g \mid C h \mid i \\ D &\rightarrow AB \mid \text{epsilon} \end{aligned}$$

Follow of C is_____.

- **g, h, i, \$** PG # 47
- g, h, \$
- h, i, \$
- h, g, \$

127. The test of string is described by a rule called a, associated with token.

- Character
- Loader
- **Pattern**
- None of the given

128. Bottom up parsing is also called_____.

- **LR Parsing** PG # 70

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- LT Parsing
 - LS Parsing
 - None of the given
129. A DFA can be reconstructed from NFA using the subset construction, similar to one used for
- **Lexical Analysis** PG # 82
 - Physical Analysis
 - Logical Analysis
 - Parsing
130. Which of the following system software resides in the main memory always?
- Text editor
 - Assembler
 - Linker
 - **Loader**
131. _____ plays an important role in code optimization.
- **DAG** PG # 143
 - Lexical Analyzer
 - AGD
 - Memory Management
132. LR parsers can handle _____ grammars.
- **Left-recursive** PG # 63
 - file-recursive
 - End-recursive
 - Start-recursive
133. Performing common sub expression elimination on a dependency graph requires the identification of nodes with the same operator and operands. When using a hash table (with a hash

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function based on operator and operands) all ___ nodes can be identified in linear time.

- **Common**
- Uncommon
- Next
- Previous

134. Linear IRs resembles pseudo-code for same ___.

- Automated Machine
- Mechanical machines
- Token machines

➤ **Abstract machine** PG # 100

135. Responsibility of _____ is to produce fast and compact code.

- **Instruction selection**
- Register allocation
- Instruction scheduling
- None of given

136. Optimal registers allocation is an NP-hard problem.

- True
- **False** Page no : 10

137. Left factoring of a grammar is done to save the parser from back tracking.

- **True** Page no:61
- False

138. Recursive _____ parsing is done for LL(1) grammar.

- **Decent** Page no : 47
- Ascent
- Forward
- Backward

139. If X is a terminal in $A \rightarrow aX\cdot$, then this transition corresponds to a shift of _____ from input to top of parse stack.

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➤ **X**

➤ A

➤ a

➤ None of the given

140. An ϵ does not need to examine the entire stack for a handle, the state symbol on the top of the stack contains all the information it needs.

➤ **LR parser**

➤ RL parser

➤ BU parser

➤ None of the given

141. Suppose α begins with symbol X which may be a terminal (token) or non-terminal. The item can be written as $A\alpha X\bullet$.

➤ **True**

➤ False

142. YACC parser generator builds up

➤ SLR parsing table

➤ Canonical LR parsing table

➤ **LALR parsing table**

➤ None of the given

143. LR(1) parsing is --- base parsing.

➤ **DFA**

➤ CFG

➤ PDA

➤ None of the given

144. The LR(1) parsers can not recognize precisely those languages in which one-symbol lookahead suffices to determine whether to shift or reduce.

➤ True

➤ **False**

145. $S \rightarrow A \mid xA \mid xAa \mid xAaA$ This grammar contains a reduce-reduce conflict.

➤ True

False

146. Following statement represents: if x relop y goto L

➤ abstract jump

➤ **Conditional Jump**

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- While Loop
- None Of Given

147. Left factoring is enough to make a grammar LL(1).

- True
- **False**

148. $S \rightarrow ABA \rightarrow e \mid aAB \rightarrow e \mid bB$ - FIRST(S) contains _____ elements.

- **3**
- 4
- 5
- 6

149. Grammars with LL(1) conflicts can be made LL(1) by applying left-factoring, substitution, and left-recursion removal. Left-factoring takes care of _____ conflicts.

- FIRST/FIRST
- First/SECOND
- SECOND/FIRST
- **NONE OF THE GIVEN**

150. In an attribute grammar each production rule ($N \rightarrow a$) has a corresponding attribute evaluation rule that describes how to compute the values of the _____ attributes of each particular node N in the AST.

- **Synthesized**
- Complete
- Free
- Bound

151. When constructing an LR(1) parser we record for each item exactly in which context it appears, which resolves many conflicts present in _____ parsers based on FOLLOW sets.

- SLR(1)
- LRS(1_
- RLS(1)

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- **None of the Given**
152. Backpatching to translate flow-of-control statements in _____ pass.
- **one**
 - two
 - three
 - all of the given
153. LR parsing _____ a string to the start symbol by inverting productions.
- **Reduce**
 - Shift
 - Adds
 - None of the Given
154. _____ phase which supports macro substitution and conditional compilation.
- **Semantic**
 - Syntax
 - Preprocessing
 - None of the Given
155. Parser always gives a tree like structure as output
- **True**
 - False
156. Lexer and scanner are two different phases of compiler
- True
 - **False**
157. _____ tree in which each node represents an operator and children of the node represent the operands.
- **Abstract Syntax**
 - Concrete Syntax
 - Parse
 - None of the Given

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158. Register allocation by graph coloring uses a register interference graph. _____ nodes in the graph are joined by an edge when the live ranges of the values they represent overlap.

➤ **Two**

➤ Three

➤ Four

➤ Five

159. In compilation process Hierarchical analysis is also called

➤ Parsing

➤ Syntax Analysis

➤ **Both Parsing and Syntax analysis**

➤ None Of the Given

160. Ambiguity can easily be handled by Top-down Parser

➤ **True**

➤ False

161. Front-end of a two pass compiler is consists of Scanner.

➤ **True**

➤ False

162. LL(1) parsing is called non-predictive parsing.

➤ **True**

➤ False

163. In predictive parsing table the rows are _____.

➤ **Non-Terminal**

➤ Terminals

➤ Both A and B

➤ None of the Given

164. In LL1() parsing algorithm _____ contains a sequence of grammar symbols.

➤ **Stack**

➤ Link List

➤ Array

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- None of the Given
165. AST summarizes the grammatical structure with the details of derivations.
- True
 - **False**
166. If X is a non-terminal in $A? aX\bullet?$, then the interpretation of this transition is more complex because non-terminals do not appear in input
- **Yes**
 - No
167. If I is a set of items for a grammar, then closure (I) is a set of items constructed from I by the following rule.
- If $A \rightarrow aX.Y$ is in closure (I) and $Y \rightarrow r$ is production, then add $X \rightarrow .r$ to closure (I).
 - **If $A \rightarrow a.XY$ is in closure (I) and $X \rightarrow r$ is production, then add $X \rightarrow .r$ to closure (I).**
 - If $A \rightarrow aXY.$ is in closure (I) and $A \rightarrow r$ is production, then add $X \rightarrow .r$ to closure (I).
 - None of these
168. NFA of LR(0) items means _____
- look-ahead one sybole
 - **no look-ahead**
 - look-ahead all sybols
 - None of the given
169. A grammar is LR if a----- shift reduce-reduce parser can recognize handles when they appear on the top of stack.
- left-to-reverse
 - left-to-rise
 - **left-to-right**
 - None of the given.
170. The output from the algorithm of constructing the collection of canonical sets of LR(1) items will be the _____
- Original Grammar G
 - Augmented grammar G'
 - Parsing table
 - **None of the given**

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171. Reduction of a handle to the ----- on the left hand side of the grammar rule is a step along the reverse of a right most derivation.

- Terminal
- **Non-terminal**

172. NFA of LR(1) items means _____

- no look-ahead
- **look-ahead one sybole**
- look-ahead all sybols
- None of the given

173. performing common subexpression elimination on aa dependency graph requires the identification of nodes with the same operator and operands.when using a hash table (with a hash function based on operator and operands) all _____ nodes can be identified in linear time.

- **common**
- uncommon
- next
- previous

174. Linear IRs resemble pseudo-code for same _____.

- **Automated Machine**
- Mechanical machines
- Token machines
- Abstract machine

175. The regular expressions $a^*|b^*$ and $(a|b)^*$ describe the _____ set of strings.

- Same
- **Different**
- Onto

176. Back patching to translate flow-of-control statements in _____ pass.

- **one Page no : 111**
- two
- three
- all of the given

177. Consider the following grammar, $S \rightarrow aT Ue$ $T \rightarrow Tbc/b$ $U \rightarrow d$
And suppose that string “abbcde” can be parsed bottom-up by the following reduction steps: (i) $aTbcde$ (ii) $aTde$ (iii) $aT Ue$ (iv) S So

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what can be a handle from the following?

- **The whole string, (aTUE)**
- The whole string, (aTbcde)
- The whole string, (aTde)
- None of the given

178. Yacc contains built-in support for handling ambiguous grammars resulting in _____ conflicts.

- **Shift-reduce**
- Shift-Shift
- Shift-second
- None of the given

179. The following two items $A \rightarrow P \cdot Q$ $B \rightarrow P \cdot Q$ can co-exist in an _____ item set.

- **LR**
- LS
- LT
- PR

180. The error handling mechanism of the yacc parser generator pushes the input stream back when inserting 'missing' tokens.

- **True**
- False

181. Flow of values used to calculate synthesized attributes in the parse tree is:

- **Bottom-up**
- Right to left
- Top-Down
- Left to right

182. A lexical analyzer transforms a stream of tokens. The tokens are stored into symbol table for further processing by the parser.

- **True**
- False

183. LR parsers can handle _____ grammars.

- **Left-recursive Page no: 163**
- file-recursive
- End-recursive

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➤ Start-recursive

184. For each language to make LL(1) grammar, we take two steps, 1st is removing left recurrence and 2nd is applying fin sequence.

➤ True

➤ **False**

185. Can a DFA simulate NFA?

➤ Yes

➤ No

➤ **Sometimes**

➤ Depend upon nfa

186. Which of the statement is true about Regular Languages?

➤ Regular Languages are the most popular for specifying tokens.

➤ Regular Languages are based on simple and useful theory.

➤ Regular Languages are easy to understand.

➤ **All of the given**

187. The transition graph for an NFA that recognizes the language $(a|b)^*abb$ will have following set of states.

➤ {0}

➤ {0,1}

➤ {0,1,2}

➤ **{0,1,2,3} not sure**

188. Functions of Lexical analyzer are?

➤ Removing white space

➤ Removing constants, identifiers and keywords

➤ Removing comments

➤ **All of the given**

189. Consider the following grammar, $S \rightarrow aT U e$ $T \rightarrow T b c / b U$ $U \rightarrow d$

And suppose that string "abcde" can be parsed bottom-up by the following reduction steps: (i) $aTbcde$ (ii) $aTde$ (iii) $aT U e$ (iv) S So, what can be a handle from the following?

➤ **The whole string, (aT U e) Page no : 68**

➤ The whole string, (aTbcde)

➤ The whole string, (aTde)

➤ None of the given

190. The LR(1) items are used as the states of a finite automaton (FA) that maintains information about the parsing stack and progress of a shift-reduce parser.

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➤ True Page no: 74

➤ False

191. Flex is an automated tool that is used to get the minimized DFA (scanner).

➤ True

➤ False

192. We use ----- to mark the bottom of the stack and also the right end of the input when considering the Stack implementation of Shift-Reduce Parsing.

➤ Epsilon

➤ #

➤ \$

➤ None of the given

193. When generating a lexical analyzer from a token description, the item sets (states) are constructed by two types of “moves”: character moves and _____ moves.

➤ E (empty string) Page no : 18

➤ #

➤ @

➤ none of given

194. Let a grammar $G = (V_n, V_t, P, S)$ is modified by adding a unit production $S' \rightarrow S$ to the grammar and now starting non-terminals becomes S' and grammar becomes $G' = (V_n \cup \{S'\}, V_t, P \cup \{S' \rightarrow S\}, S')$. The Grammar G' is called the -----

➤ Augmented Grammar Page no : 76

➤ Lesser Grammar

➤ Anonymous Grammar

➤ none of given

195. Parser takes tokens from scanner and tries to generate _____.

➤ Binary Search Tree

➤ Parse Tree

➤ Syntax Trace

➤ None of the Given

196. In Flex specification file different sections are separated by ____.

➤ %% Page no: 26

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- &&
- ##
- \\

197. In DFA minimization we construct one _____ for each group of states from the initial DFA.

- State Page no : 25
- NFA
- PDA
- None of Given

198. Intermediate Representation (IR) stores the value of its operand in _____.

- Registers
- Memory
- Hard Disk
- Secondary Storage

199. In _____ certain checks are performed to ensure that components of a program fit together meaningfully.

- Linear analysis
- Hierarchical analysis
- Semantic analysis Page no : 33
- None

199. A _____ is a top down parser.

- Predictive Parsing
- Reactive parser
- Proactive parser
- None of the given

200. Lexical Analyzer generator _____ is written in Java.

- Flex
- Jflex Page no : 26
- Complex

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➤ None of given

201. _____ avoid hardware stalls and interlocks.

➤ Register allocation

➤ **Instruction scheduling**

➤ Instruction selection

➤ None of given

202. Recursive _____ parsing is done for LL(1) grammar.

➤ **Decent**

➤ Ascent

➤ Forward

➤ Backward

203. NFA of LR(1) items means _____

➤ no look-ahead

➤ **look-ahead one symbols**

➤ look-ahead all symbols

➤ None

204. In the Parsing Table, the rows correspond to Parsing DFA states and columns correspond to _____

➤ **Terminals and Non-terminals**

➤ Start Symbol and its derivation

➤ Handles and derivations

➤ None

205. A grammar is LR if a _____ shift reduce-reduce parser can recognize handles when they appear on the top of the stack

➤ left-to-reverse

➤ left-to-rise

➤ **left-to-right**

➤ None

206. Suppose ? begins with symbol X which may be a terminal (token) or non-terminal. The item can be written as $A?Xa?$

➤ **True**

➤ False

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207. A handle is a substring that matches a ___ side of production rule in the grammar.

- right hand
- left hand

208. If $T \rightarrow XYZ$ is a production of grammar G then which of the following item indicates that a string derivable from X has been seen so far on the input and we hope to see a string derivable from YZ next on the input.

- $T \rightarrow .XYZ$
- $T \rightarrow X.YZ$
- $T \rightarrow XY.Z$
- $T \rightarrow XYZ.$

209. In the canonical collection procedure, a DFA can not be constructed from NFA using the subset construction, similar to the one we used for lexical analysis.

- True
- False

210. Suppose α begins with symbol X which may be a terminal (token) or non-terminal. The item can be written as ___

- $A\alpha.X$
- $A\alpha.X.$
- $A\alpha X.$
- $X\alpha A.$

211. If I is a set of items for grammar then $\text{closure}(I)$ is a set of items constructed from I by the following rule.

- Every item in I is in $\text{closure}(I)$
- Every item in I is not in $\text{closure}(I)$
- Only one item in I is in $\text{closure}(I)$
- None

212. NFA of LR(0) items means ___

- no look ahead symbol

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- look ahead one symbol
- look ahead all symbols
- All of the given

