Solved by:	Sahar (well wisher)	Class	BSCS 6th Semester
Subject	CS606 (COMPILER CONSTRUCTION)	Solution Type:	Final Term Solved MCQZ and Quizez including Papers of Year : 2013,2012,2011,2010,2009… 2006
Institute:	Virtual University of Pakistan		

Final term QUIZEZ
Year 2013

1)

The regular expressions a*|b* and (a|b)* describe the _____set of strings.

Same

Different

Onto

2)

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

For each set / in C and each grammar symbol X where goto (C, X) is empty and not in C add the set goto (C, X) to C.

The first set in C is the closure of {[S' --> .S]}, where S' is starting symbol of original grammar and S is the starting non-terminal of augmented grammar. Page no : 72

The first set in C is the closure of {[S' --> .S]}, where S is starting symbol of original grammar and S' is the starting non-terminal of original grammar.

3)

S --> a | B

B --> Bb | E The non-terminal _____ is left recursive.

Answer: B

4)

Consider the following grammar, S --> aTUe T --> Tbc/b U --> d And suppose that string "abbcde" 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 (a) in (aTUe) not confirm

The (a) in (aTUe)

The (d) in (aTUe)

5)

In an attribute grammar each production rule(N--> 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.

Select correct option:

1. **Synthesized page no : 92**
2. Complete
3. Free
4. Bounded

6)

Consider the following grammar, S --> aTUe T --> Tbc/b U --> d And suppose that string “abbcde” 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?

Select correct option:

1. **The whole string, (aTUe) Page no : 68**
2. The whole string, (aTbcde)
3. The whole string, (aTde)
4. None of the given

7)

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.

Select correct option:

1. SLR(1)
2. LRS(1)
3. RLS(1)
4. **None of the given**

8)

The _____translation statements can be conveniently specified in YACC

Select correct option:

1. **Syntax-directed Page no : 120**
2. Image-directed
3. Sign-directed
4. None of the given.

9)

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.

Select correct option:

1. Epsilon

2. #
3. **$ Page no : 65**
4. None of the given

10)

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.

Select correct option:

1. FIRST/FIRST
2. FIRST/SECOND
3. SECOND/FIRST
4. **None of the given**

11)

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

Select correct option:

1. **E (empty string) Page no : 18**
2. #
3. @
4. none of given

12)

Bottom-up parsers handle a _____ class of grammars.

Select correct option:

1. **large Page no : 63**
2. small
3. medium
4. none of the given

13)

Let a grammar G = (Vn, Vt, P, S) is modified by adding a unit production S’--> S to the grammar and now starting non-terminals becomes S’ and grammar becomes G’ = (Vn U {S’}, Vt, P U{S’ --> S}, S’). The Grammar G’ is called the ----------

Select correct option:

1. **Augmented Grammar Page no : 76**
2. Lesser Grammar
3. Anonymous Grammar
4. none of given

14)

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.

Select correct option:

1. **True** **Page no: 74**
2. false

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

Select correct option:

1. **one** **Page no : 111**
2. two
3. three
4. all of the given

15)

Consider the following grammar, S --> aTUe T --> Tbc/b U --> d And suppose that string “abbcde” 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?

Select correct option:

1. The second (b) in (abbcde)
2. The first (b) in (abbcde)
3. The substring (cd) in (abbcde)
4. None of the given

16)

S --> A | xb
A --> aAb | x This grammar contains a reduce-reduce conflict.
Select correct option:

True
False

17)

Yacc contains built-in support for handling ambiguous grammars resulting in _____ conflicts.
Select correct option:

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

18)

A lexical analyzer generator automatically constructs a _____ that recognizes tokens.
Select correct option:

FA
PDA
DP
None of the given

19)

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

E (empty string) **Repeated**
#
@
None of the given

20)
Attributes whose values are defined in terms of a node’s own attributes, node’s siblings and node’s parent are called _____ .
Select correct option:

Inherited attributes **Page no : 92**
Physical attributes
Logical attributes
Un-synthesized attributes

21)
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.
Select correct option:

Two **page no : 136**
Three
Four
Five

22)
The following two items A -> P • Q B -> P • Q can co-exist in an _____ item set.
Select correct option:

LR
LS
LT
PR

23)

Goto L statement represent

Select correct option:

Unconditional jump **Page no : 107**

24)

Three-address codes are often implemented as a _____.

Select correct option:

Set of quadruples **Page no : 104**

25)

Attributes of a node whose values are defined wholly in terms of attributes of node's children and from constants are called _____.

Synthesized attributes Page no : 92

26)

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

Select correct option:

Answer: True

27)

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

Select correct option:

Answer: $$ Page no : 98

28)

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

Select correct option:

Answer: Bottom-up Page no: 92

29)

Following statement represents: if x relop y goto L

Answer: conditional loop Page no : 107

30)

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

Answer: indexed assignment Page no : 107

31)

S --> A B

A --> e | aA

B --> e | bB - FIRST(S) contains ___ elements

Answer: 3 Page no : 46

First{S}={e,a,b}

32)

Dotted items (T→a •b) record which part of a token has already been matched. Integer? ([0-9])+ • This is a _____ item.

Answer: Extended Page no : 73

33)

Parser generator for the grammar LALR (1) is:

Answer: YACC, Bison, CUP Page no: 88

34)

A _____ is a top down parser.

Answer: Predictive Parsing Page no: 46

35)

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

Answer: True Page no: 99

FINAL TERM QUIZEZ

YEAR 2012+previous

Question # 1 of 10 (Start time: 06:31:04 PM) Total Marks: 1
Parser always gives a tree like structure as output
Select correct option:
True Page no : 8

False

Question # 2 of 10 (Start time: 06:32:19 PM) Total Marks: 1
Lexer and scanner are two different phases of compiler
Select correct option:

True
False Page no : 25

Question # 3 of 10 (Start time: 06:33:49 PM) Total Marks: 1
Intermediate Representation (IR) stores the value of its operand in _____ .
Select correct option:

Registers Page no : 10
Memory
Hard disk
Secondary storage

Question # 4 of 10 (Start time: 06:35:17 PM) Total Marks: 1
In Flex specification file different sections are separated by _____ .
Select correct option:

%% Page no: 26
&&
##
\\

Question # 7 of 10 (Start time: 06:38:21 PM) Total Marks: 1
_____ phase which supports macro substitution and conditional compilation.
Select correct option:

Semantic
Syntax
Preprocessing
None of given

Question # 9 of 10 (Start time: 06:40:30 PM) Total Marks: 1
Flex is an automated tool that is used to get the minimized DFA (scanner).
Select correct option:

True
False Page no: 26

Question # 10 of 10 (Start time: 06:41:58 PM) Total Marks: 1
_____tree in which each node represents an operator and children of the node represent the operands.
Select correct option:

Abstract syntax Page no : 100
Concrete syntax
Parse
None of the given

Question # 2 of 10 (Start time: 06:47:42 PM) Total Marks: 1
In _____certain checks are performed to ensure that components of a program fit together meaningfully.
Select correct option:

Linear analysis
Hierarchical analysis

Semantic analysis **Page no : 33**
None of given

Question # 3 of 10 (Start time: 06:48:58 PM) Total Marks: 1
In compilation process Hierarchical analysis is also called
Select correct option:

Parsing
Syntax analysis
Both Parsing and Syntax analysis
None of given

Question # 5 of 10 (Start time: 06:51:46 PM) Total Marks: 1
Which of the following statement is true about Two pass compiler.
Select correct option:

Front End depends upon Back End
Back End depends upon Frond End **page no : 5**
Both are independent of each other
None of the given

Question # 8 of 10 (Start time: 06:55:41 PM) Total Marks: 1
_____ algorithm is used in DFA minimization.
Select correct option:

James's
Robert's
Hopcroft's **Page no : 19**
None of given

Question # 9 of 10 (Start time: 06:56:23 PM) Total Marks: 1
Ambiguity can easily be handled by Top-down Parser
Select correct option:

True
False

LR parsers can handle _____ grammars.

Left-recursive **Page no: 163**

file-recursive

End-recursive

Start-recursive

_____ convert the reloadable machine code into absolute machine code by linking library and reloadable object files.

Assembler

Loader/link-editor

Compiler

Preprocessor

Consider the grammar A --> B C D

B --> h B | epsilon

C --> C g | g | C h | i

D --> A B | epsilon

Follow of B is _____ .

h

g, h, i, $

g, i

g

Consider the grammar A --> B C D

B --> h B | epsilon

C --> C g | g | C h | i

D --> A B | epsilon

Follow of C is _____ .

g, h, i, $ **Page no : 47**

g, h, $

h, i, $

h, g, $

An important component of semantic analysis is _____ .

code checking

type checking page no : 6

flush checking

None of the given

In PASCAL _____ represent the inequality test.

:=

=

<>
None of the given

Lexical Analyzer generator _____ is written in Java.

Flex

Jlex Page no : 26

Complex

None of given

_____avoid hardware stalls and interlocks.

Register allocation

Instruction scheduling Page no : 10

Instruction selection

None of given

Consider the following grammar,

A --> B C D

B --> h B | episilon

C --> C g | g | C h | i

D --> A B | episilon

First of A is _____ .

h, g, i

g

h

None of the given

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

Decent Page no : 47

Ascent

Forward

Backward

One of the core tasks of compiler is to generate fast and compact executable code.

True

False

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

True Page no:61

False

Responsibility of _____ is to produce fast and compact code.

Instruction selection

Register allocation

Instruction scheduling

None of given Page no: 9

_____ algorithm is used in DFA minimization.

James's

Robert's
Hopcroft's **Page no:25**
None of given

Compilers are sometimes classified as.

Single pass

Multi pass

Load and go

All of the given

In multi pass compiler during the first pass it gathers information about _____ .
Select correct option:
Declaration
Bindings
Static information
None of the given **

Question # 9 of 10 (Start time: 06:40:30 PM) Total Marks: 1
Flex is an automated tool that is used to get the minimized DFA (scanner).
Select correct option:
True
False

In compilation process Hierarchical analysis is also called
Select correct option:
Parsing
Syntax analysis
Both Parsing and Syntax analysis
None of given

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

_____is evaluated to yield a value.

Command
Expression
Declaration
Declaration and Command

LR parsers can handle _____ grammars.
Left-recursive **page no : 63**
file-recursive
End-recursive
Start-recursive

Optimal registers allocation is an NP-hard problem.

True

False **Page no : 10**

Parser takes tokens from scanner and tries to generate _____ .

Binary Search tree

Parse tree

Syntax trace **Page no : 6**

None of the given

Front end of two pass compiler takes_____ as input.

Source code **Page no: 5**

Intermediate Representation (IR)

Machine Code

None of the Given

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

State **Page no : 25**

NFA

PDA

None of given

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

Front End

Middle End **Page no : 10**

Back End

Both Front end and Back end

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

Back end **Page no : 9**

Front end

Start

None of given

NFA is easy to implement as compared to DFA.

True

False **Page no : 19**

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

Parser always gives a tree like structure as output

True **page no : 37**

False

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

Registers
Memory
Hard disk
Secondary storage

In Back End module of compiler, optimal register allocation uses_____ .
O(log n)
O(n log n)
N P-Complete Page no : 10
None of the given

CS 606 Quizez

Can a DFA simulate NFA?

Yes

No

Sometimes

Depend upon nfa

_____ phase which supports macro substitution and conditional compilation.

Semantic

Syntax

Preprocessing

None

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

Lexer and scanner are two different phases of compiler

True

False Page no :13

Lexical Analyzer generator _____ is written in Java.

Flex

Jlex Page no :26

Complex

None of the given

In a transition table cells of the table contain the _____ state.

Reject state

Next state **Page no 18**

Previous state

None of the given

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**

Front end of two pass compiler takes_____ as input.

Source code

Intermediate representation

Machine code

None

Functions of Lexical analyzer are?

Removing white space

Removing constants, identifiers and keywords

Removing comments

All of the given

Question # 1 of 10 (Start time: 07:25:59 PM) Total Marks: 1

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

Select correct option:

True

False

Question # 2 of 10 (Start time: 07:26:40 PM) Total Marks: 1

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

Select correct option:

True

False

Question # 3 of 10 (Start time: 07:28:09 PM) Total Marks: 1

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

Select correct option:

Backward

Forward

Ascent

Decent

Question # 4 of 10 (Start time: 07:29:35 PM) Total Marks: 1

In predictive parsing table the rows are _____ .

Select correct option:

Non-terminals

Terminals

Both non-terminal and terminals

None of the given

Question # 5 of 10 (Start time: 07:30:38 PM) Total Marks: 1

We can get an LL(1) grammar by _____ .

Select correct option:

Removing left recurrence

Applying left factoring

Removing left recurrence and Applying left factoring

None of the given

Question # 6 of 10 (Start time: 07:31:48 PM) Total Marks: 1

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

Select correct option:

Backend

Frontend

Start

Question # 7 of 10 (Start time: 07:32:26 PM) Total Marks: 1

Consider the grammar

A --> B C D

B --> h B | epsilon

C --> C g | g | C h | i

D --> A B | epsilon First of C is _____ .

Select correct option:

g, I look down for reference

g

h i

i

Quiz Start Time: 07:25 PM

Time Left 81

sec(s)

Question # 8 of 10 (Start time: 07:33:12 PM) Total Marks: 1

Alternative of the backtrack in parser is Look ahead symbol in _____ .

Select correct option:

input

output

input and output

none

Question # 9 of 10 (Start time: 07:34:09 PM) Total Marks: 1

AST summarizes the grammatical structure with the details of derivations.

Select correct option:

True

False

Quiz Start Time: 07:25 PM

Time Left 81

sec(s)

Question # 10 of 10 (Start time: 07:35:06 PM) Total Marks: 1

One of the core tasks of compiler is to generate fast and compact executable code.

Select correct option:

True

False

Left factoring is enough to make LL1 grammar

True

False

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

Stack

Link list

Array

None