NPTEL Online Certification Courses

Indian Institute of Technology Kharagpur

Compiler Design

Assignment- Week 0

TYPE OF QUESTION:MCQ

Number ofquestions:12 **Total mark: 12 X 1 = 12**

Q1.

Task of a compiler is to-

a) Translate one statement at a time and execute it

b) Translate the whole program to machine language

c) Translate one statement of the program at a time

d) None of the other options

ANS : b) Translate the whole program to machine language

Q2.

In a computer system, number of compilers for a particular programming language may be

a) Two

b) Three

c) Four

d) Many

ANS: d) Many

Q3.

Natural language constructs are

a) Ambiguous

b) Unambiguous

c) May be Unambiguous or ambiguous

d) None of the other options

ANS: c) May be Unambiguous or ambiguous

Q4.

A compiler is defined as

a) Part of system software

b) Part of operating system

c) Part of machine code

d) None of the other options

ANS: a) Part of system software

Q5.

Suppose there is a compiler for C language that can generate code for Computer A. Which of the following statements is true

a) It can be used for Computer A only

b) It can be used for any computer

c) It can be used only for computers with similar processor and operating system

d) It can be used only for computers with similar processor, operating system and peripherals

ANS: c) It can be used only for computers with similar processor and operating system

Q6.

Which of the following data structures may be good if there are frequent search for data items followed by insertion and deletion?

a) Array

b) Link List

c) Tree

d) Hash Table

ANS: d) Hash Table

Q7.

In a computer system number of compilers may be

a) One
b) Many
c) Two
d) Ten

ANS: b) many

Q8.

Task of an interpreter is to

a) Translate one statement of the program at a time

b) Translate one statement at a time and execute it

c) Translate the whole program to machine language

d) None of the other options

ANS: b) Translate one statement at a time and execute it

Q9.

If an Infinite language is passed to Machine M, the subsidiary which gives a finite solution to the infinite input tape is _____________

a) Compiler

b) Interpreter

c) Loader and linkers

d) None of the mentioned

ANS : a) Compiler
Explanation: A Compiler is used to give a finite solution to an infinite phenomenon. Example of an infinite phenomenon is Language C, etc.

Q10.

Languages of a automata is

a) If it is accepted by automata
b) If it halts
c) If automata touch final state in its life time
d) All language are language of automata

ANS: Answer: a) If it is accepted by automata

Explanation: If a string accepted by automata it is called language of automata.

Q11.

Finite automata requires minimum _______ number of stacks.

a) 1
b) 0
c) 2
d) None of the mentioned

ANS: b) 0

Explanation: Finite automata doesn't require any stack operation .

Q12.

The basic limitation of finite automata is that

a) It can't remember arbitrary large amount of information.

b) It sometimes recognize grammar that are not regular.

c) It sometimes fails to recognize regular grammar.
d) All of the mentioned

ANS: a) It can't remember arbitrary large amount of information.
Explanation: Because there is no memory associated with automata.

END of Assignment

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Assignment - Week 1

TYPE OF QUESTION:MCQ

Number ofquestions:12 Total mark: 12 X 1 = 12

Q1.

Which phase of compiler does NOT use symbol table?

a) Code generation
b) Syntax Analysis
c) Lexical Analysis
d) None of the other options

ANS : d) None of the other options

Q2.

Which phase of compiler is Syntax Analysis?

a) First

b) Second

c) Third

d) None of the mentioned

ANS: b) It is Second Phase Of Compiler after Lexical Analyzer.

Q3.

Output of the syntax analysis is called

a) Parse tree
b) Keyword tree
c) Binary tree
d) All of the other options

ANS: A) parse tree

Q4.

A programming language does not allow integer division operation. This is generally detected in the phase of

a) Lexical Analysis

b) Syntax Analysis

c) Semantic Analysis

d) None of the other options

ANS: c) Semantic Analysis

Q5.

Which of these is not true about Symbol Table

a) All the labels of the instructions are symbols

b) Table has entry for symbol name address value

c) Perform the processing of the assembler directives

d) Created during pass 1

ANS: c) The Symbol table does not ever perform the processing of the assembler derivative.

Q6.

A compiler can check

a) Logical error

b) Syntax error

c) Both logical error and syntax error

d) Not logical and syntax error

Answer: b) syntax error

Explanation: No compiler can ever check logical errors.

Q7. Error recovery helps to

a) Report multiple errors
b) Rectify multiple errors
c) Both report and rectify multiple errors
d) None of the other options

ANS: a) Report multiple errors

Q8. Converting a hardware description into actual circuitry is known as

a) Silicon Compilation
b) HDL Compilation
c) Circuit Compilation
d) None of the other options

ANS: a) Silicon Compilation

Q9.

Loops are the major targets for optimization since

a) Loop may go to infinite execution
b) Loop body is repeated to several times
c) Condition check takes exceedingly large time
d) None of the other options

ANS : B) loop body is repeated several times

Q10.

For maximum speed of execution of target code , temporary variables be best allocated to

a) Swap space

b) Main memory

c) CPU registers

d) None of the other options

Answer: c) CPU registers

Q11.

Intermediate code helps in

a) Program Analysis
b) Code optimization
c) Retargeting code
d) Code check

ANS: c) Retargeting code

Q12.

Output file of Lex is _____ the input file is Myfile

a) Myfile.e
b) Myfile.yy.c
c) Myfile.lex
d) Myfile.obj

Answer: b
Explanation: This Produce the file “myfile.yy.c” which we can then compile with g++.

END of Assignment

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Compiler

DesignAssignment-

Week 2

TYPE OF QUESTION:MCQ

Number ofquestions:13 Total mark: 13 X 1 = 13

1. A regular expression represents

   a) Part of a language

   b) Cannot represent any language

   c) Constituent strings of a language

   d) None of the other options

Ans: C) Constituent strings of a language

2. When expression sum=3+2 is tokenized then what is the token category of 3

   a) Identifier
   b) Assignment operator
   c) Integer literal
   d) Addition operator

Ans : c)

Explanation:

Lexeme

Token category

Sum “Identifier”

= “Assignment operator”

3 “Integer literal”

+ “Addition operator”

2 “Integer literal”

; “End of statement”

3. For the Fortran language statement “DO 5 I = 1.25” returns token IDENTIFIER for DO 5 I after looking upto

   a) I
   b) =
   c) .
   d) 5

Ans: C)

4. Which of the following are Lexemes?
   a) Identifiers
   b) Constants
   c) Keywords
   d) All of the mentioned

Ans : d) Explanation: Different Lexical Classes or Tokens or Lexemes Identifiers, Constants, Keywords, Operators.

5.

A regular expression for accepting strings with exactly one 1 more than 0's is

a) 0*1

b) (0|1)*1(0|1)*

c) (0|1)*1(0|1)*|1(0|1)*

d) Not Possible

Ans: d)

6.

Which one of the following languages over the alphabet {0,1} is described by the regular expression: (0+1)*0(0+1)*0(0+1)*

a) The set of all strings containing the substring 00.

b) The set of all strings containing at most two 0's.

c) The set of all strings containing at least two 0's.

d) The set of all strings that begin and end with either 0 or 1.

Ans : C)Explanation: The regular expression has two 0′s surrounded by (0+1)* which means accepted strings must have at least 2 0′s.

7.

Finite automata is an implementation of
a) Regular expression
b) Any grammar
c) Part of the regular expression
d) None of the other options

Ans: A)

8.
The automation which allows transformation to a new state without consuming any input symbols:

a) NFA
b) DFA
c) Pushdown automata
d) All of the mentioned

Ans: A)

9.
The _________ of a set of states, P, of an NFA is defined as the set of states reachable from any state in P following ε-transitions

a) ε-closure

b) ε-park

c) Q in the tuple

d) None of the mentioned

Ans: A) Explanation: The ε-closure of a set of states, P, of an NFAis defined as the set of states reachable from any state in P following e-transitions.

10.
Between NFA and DFA which one is powerful

a) NFA
b) DFA
c) Equally powerful
d) Cannot be said definitely

Ans: c)

11.
Subset Construction method refers to

a) Conversion of NFA to DFA

b) DFA minimization

c) Eliminating null references

d) ε-NFA to NFA

Ans: A) Explanation: The conversion of a non-deterministic automata into a deterministic one is a process we call subset construction or power set construction.

12.
Which of the following do we use to form an NFA from a regular expression

a) Subset construction method

b) Powerful set construction method

c) Thompson construction method

d) Scott construction method

Ans: C) Explanation: Thompson Construction method is used to turn a regular expression in an NFA by fragmenting the given regular expression through the operations performed on the input alphabets.

13.
A certain compiler corrects errors like “fi” to “if” automatically. This is an example of recovery in

a) Panic mode
b) Delete character
c) Replace Character
d) Transpose character

Ans: D)

END of Assignment

Compiler Design

Assignment- Week 3

TYPE OF QUESTION:MCQ

Number ofquestions:10 Total mark: 10 X 1 = 10

1. Which of the following is a lexical analysis tool

a) Lex
b) Flex
c) Jflex
d) All of the other options

Ans: d)

2. In a lex specification file "?" stands for

a) 0 or more occurrences of preceding regular expression
b) One or more occurrences of preceding regular expression
c) Exactly one occurrences of preceding regular expression
d) None of the other options

Ans: d)

3.

Between NFA and DFA which an has the potential to have more states in it

a) DFA
b) NFA
c) Cannot be said deterministically
d) Both of same number of sets

Ans: a)

4. Which of the following has more expressive power

a) DFA
b) NFA
c) Regular expression
d) All of the mentioned

Ans: d)

5.
Lex specification file sections are demarcated by

a) %
b) {%
c) %}
d) %%

Ans: d)

6. ε-closure of a state includes

a) All states reachable from it by ε transitions only
b) All states reachable from it by single ε transitions only
c) All states from which this state can be reached using ε transitions
d) All states from which this state can be reached using ε transitions and all states reachable from it by ε transitions only

Ans: a)

7.
Which among the following is false?
ε-closure of a subset S of Q is:

a) Every element of S
b) For any q ϵ ε-closure, every element of δ (q, ε) is in ε-closure.
c) No other element is in ε(S)
d) None of the mentioned

Answer: d)

8.
Output of lex program is available in a file named
a) Lex.c
b) Lex.yy.c
c) Lex.l
d) Lex.yy.l

Ans: b)

9.
All the regular languages can have one or more of the following descriptions:
i) DFA ii) NFA iii) Regular Expressions
Which of the following are correct?

a) i only
b) ii , iii
c) i , ii
d) iii only

Ans: b)

10.
Number of sections in a lex program is

a) 1
b) 2
c) 3
d) 4

Ans: c)

END of Assignment

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Assignment- Week 4

TYPE OF QUESTION:MCQ

Number ofquestions:11 Total mark: 11 X 1 = 11

1. Words of a language constitute

   a) Set of terminals
   b) Set of non terminals
   c) Set of both terminals and non terminals
   d) None of the other options
   Ans: a)

2. The grammar {E →E + E | E * E | id} is

   a) Ambiguous
   b) Unambiguous
   c) Partially ambiguous
   d) None of the other options
   Ans: a)

3. Which of the following are always unambiguous

   a) Producing one left-most and one right-most derivation
   b) Producing one left-most but may be multiple right-most
   c) Producing one right-most but may be multiple left-most
   d) None of the other options
   Ans: a)

4. A regular language can be specified by

   a) Regular expression
   b) Regular grammar
   c) Both expression and regular grammar
   d) None of the other options
   Answer: c)

5. A grammar with production rules { A→ Ba | Cb, B → CA, C → c | ε} contains

   a) Left factor
   b) Left recursion
   c) Both left factor and left recursion
   d) None of the other options
   Ans: b)

6. For the grammar rules {S → Aa | bB, A → c |ε}, FIRST(S) is

a) {b, c}
b) {a, b}
c) {a,b, c}
d) {a ,b , c , ε }

Ans: c)

7. The grammar {E →E + T | T, T →T * F | F, F → id} is

a) Ambiguous
b) Unambiguous
c) Partially ambiguous
d) None of the other options

Ans: b)

8. Derivation produced by a top-down parser is

a) Leftmost
b) Rightmost
c) Either leftmost and rightmost
d) None of the other options

Ans: a)

9. For top-down parsing left recursion removal is

a) Mandatory
b) Desirable
c) Too complex
d) Not needed

Ans: a)

10. A grammar is ambiguous if

a) It's left most and right most derivations are different
b) More than one left most derivations exist
c) There is no left most derivation
d) There is no rightmost derivation

Ans: b)

11. A predictive parser

    (A) Needs backtracking
    (B) Does not need backtracking
    (C) May not terminate
    (D) None of the other options

Ans: a)
Explanation: Backtracking problem is solved by constructing a tree of choices called as the state-space tree. Its root represents an initial state before the search for a solution begins.

END of Assignment

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Assignment- Week 5

TYPE OF QUESTION:MCQ

Number ofquestions:12 Total mark: 12 X 1 = 12

1. In shift-reduce parsing, handle is at

   a) Top of the stack
   b) bottom of the stack
   c) Anywhere in the stack
   d) Nowhere in the stack

   Ans: a)

2. Which of the following conflicts is not possible in shift-reduce parsing

   a) Reduce-reduce conflict
   b) Shift-reduce conflict
   c) Shift-shift conflict
   d) None of the other options

   Ans: c)

3. Which one of the following is true at any valid state in shift-reduce parsing

   a) At the bottom we find the prefixes
   b) None of the mentioned
   c) Stack contains only viable prefixes
   d) Stack consists of viable prefixes

   Ans: c)

4. For the grammar

   $S \rightarrow AB \mid C$
   $A \rightarrow bA \mid a$
   $B \rightarrow abbS \mid bS \mid \varepsilon$
   $C \rightarrow bC \mid \varepsilon$

   Follow(A) is

   a) a, $
   b) a , b , $
   c) a, b
   d) b , $

   Answer: b)

5. Shift reduce parsers are

a) Top down Parser
b) Bottom up Parser
c) May be top down or bottom up
d) None of the mentioned

Answer: b)

6. In shift-reduce parsing, handle is at

a) Top of the stack
b) Bottom of the stack
c) Anywhere in the stack
d) Nowhere in the stack

Answer: a)

7. In Operator Precedence parsing handle is

a) Before <·
b) After ·>
c) Between <· and ·>
d) None of the other options

Answer: c)

8. By considering the rule B → abbS, which of the precedence relations between a and b can be inferred?

(A) a ≐ b only

(B) a ≐ b and b≐ b

(C) b≐ a and a ≐ b

(D) b≐ a and b≐ b

Ans: b)

9. An operator-precedence parser is a

a) Shift-reduce parser
b) Bottom-up parser
c) Parser constructing derivation in the reverse
d) All the other options

Ans: d)

10. For the grammar rule B → abbS | bS, Firstop(B) equals

a) {a}
b) {a, b }
c) {a , b , S}
d) { S }

Ans: c)

11. For the grammar

$A \rightarrow BCx \mid y$
$B \rightarrow yA \mid \varepsilon$
$C \rightarrow Ay \mid x$

In Predictive Parsing table the cell having multiple entries is

(A) M[A, x]
(B) M[C, y]
(C) M[B, y]
(D) M[B, x]

Ans: C

12. Bottom up parsing involves

a) Shift reduce
b) Handle pruning
c) None of the mentioned
d) Both shift reduce and handle pruning

Ans: d)

END of Assignment

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Assignment- Week 6

TYPE OF QUESTION:MCQ

Number ofquestions:11

Total mark: 11 X 1 = 11

1. For the grammar

   S' → S
   S → CC
   C → cC | d

   In state 0 of LR(1) parser, an item included is

   a) C → .cC; c
   b) C → .cC; d
   c) C → .cC; c,d
   d) C → .cC; c, $

   Ans: c)

2. For the grammar

   S' → S
   S → CC
   C → cC | d

   In state 0 of LR(1) parser, an item included is

   a) C → .d; c
   b) C → .d; d
   c) C → .d; c,d
   d) C → .d; c, $

   Ans: c)

3. In SLR parsing to get a shift-reduce conflict for state I on terminal symbol 'a',

   a) A →α.β with First(β) containing 'a' should be in I
   b) A →δ. be in I with Follow(A) having 'a'
   c) A →α.β with First(β) containing 'a' should be in I and A →δ. be in I with Follow(A) having 'a'
   d) None of the other options

   Ans: c)

4. In state I we have the items A →α. and B →δ., First(A), Follow(A) and Follow(B) contains the symbol ‘a’. This leads to

   a) Shift-reduce conflict
   b) Reduce – reduce conflict
   c) Both shift-reduce and reduce –reduce conflicts
   d) No conflicts

   Ans: b)

5. Between SLR, Canonical LR and LALR, which have same number of states

   a) SLR and LALR
   b) SLR and canonical LR
   c) Canonical LR and LALR
   d) All of them

   Ans : a)

6. Construction of parsing table in which strategies do not need the Follow set?

   a) SLR and canonical LR
   b) Canonical LR and LALR
   c) SLR and LALR
   d) None of the given options

   Ans: b)

7. In SLR parsing for the grammar

   $E' \rightarrow E$
   $E \rightarrow aEbE \mid bEaE \mid \varepsilon$

   In state 0, for inputs 'a' and 'b'

   a) Both will have shift-reduce conflict
   b) Only 'a' will have shift-reduce conflict
   c) Only 'b' will have shift-reduce conflict
   d) Neither of the other options

   Ans: a)

8. Amount of look ahead in LALR parser is

   a) 1
   b) 2
   c) 3
   d) None

   Ans: a)

9. In SLR parsing for the grammar

$S \rightarrow B \mid SabS$

$B \rightarrow bB \mid \varepsilon$

In state 0, for inputs 'a' and 'b'

a) Both will have shift-reduce conflict
b) Only 'a' will have shift-reduce conflict
c) Only 'b' will have shift-reduce conflict
d) Neither of the other options

Ans: b)

10. Which of the following pairs is the most powerful

a) SLR
b) Canonical LR
c) LALR
d) Nothing can be said

Ans: b) Canonical LR

11. What is the similarity between LR, LALR and SLR

a) Use same algorithm, but different parsing table.
b) Same parsing table, but different algorithm.
c) Their Parsing tables and algorithm are similar but uses top down approach.
d) Both Parsing tables and algorithm are different.

Ans: a)

END of Assignment

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Assignment- Week 7

TYPE OF QUESTION:MCQ

Number ofquestions:10 Total mark: 10 X 1 = 10

1. Full form of YACC is

   a) Yes Another Compiler Constructor
   b) Yet Another Compiler Constructor
   c) Yet Another Compiler Compiler
   d) Neither of the other options

   Ans: c)

2. File produced by YACC and used by Lex is SLR

   a) y.tab.c
   b) y.tab.h
   c) y.parse.c
   d) y.parse.h

   Ans: b)

3. Number of sections in YACC specification file is

   a) 1
   b) 2
   c) 3
   d) 4

   Ans: c)

4. In YACC rules section $$ refers to

   a) First symbol on right hand side
   b) Last symbol on right hand side
   c) Symbol on the left hand side
   d) Any of them

   Ans: c)

5. Annotated parse tree means

   a) Parse tree with attributes
   b) Code generated
   c) Correct parse tree
   d) None of the given options

   Ans: a)

6. For a rule "A → B b C" the symbol C will be referred to by

   a) $1
   b) $2
   c) $3
   d) $4

   Ans: c)

7. Syntax directed translation helps in

   a) Creating parse tree
   b) Check syntactical correctness of input
   c) Check if the input has foreign symbols
   d) None of the othrt options

   Ans: d)

8. Files generated by YACC are

   a) y.tab.c, y.token.h
   b) y.parse.c, y.tab.h
   c) y.tab.c, y.tab.h
   d) None of the other options

   Ans: c)

9. Token attributes are returned by

   a) yytext
   b) yylen
   c) yyval
   d) yylval

   Ans: d)

10. YYSTYPE defines the type for

    a) Stack
    b) Token
    c) Input
    d) Queue

    Ans: a)

END of Assignment

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Assignment- Week 8

TYPE OF QUESTION:MCQ

Number ofquestions:10 Total mark: 10 X 1 = 10

1. Type checking checks the input

   a) Lexically
   b) Semantically
   c) Syntactically
   d) All the other options

   Ans: b)

2. If the arguments passed to a function call are such that the first and the third arguments are integers while the second one is real, the type expression for the argument list can be

   a) Integer X Integer X Real
   b) Real X Integer X Integer
   c) Integer X Real X Integer
   d) None of the other options

   Ans: c)

3. Array bound check can be done

   a) Statically
   b) Dynamically
   c) Both statically and dynamically
   d) None of the other options

   Ans: b)

4. Type equivalence checks whether

   a) Two types expressions are same or not
   b) Two expressions are same or not
   c) Two statements are same or not
   d) All of the other options

   Ans: a)

5. Type of a statement is

   a) Void
   b) Type error

c) Void or type error
d) None of the other options

Ans: c)

6. Type checking done by the compiler is

a) Static
b) Dynamic
c) Both static and dynamic
d) None of the other options

Ans: a)

7. Most programming languages are weakly typed since

a) Such languages put less constraints on the programmer
b) Some type errors can be caught dynamically
c) Both of the other options
d) None of the other options

Ans: c)

8. For strongly-typed languages

a) Only static type checking is done
b) Only dynamic checking is done
c) Both static and dynamic checking are done
d) No type of checking is done

Ans: a)

9. Type casting available in many programming languages is an example of

a) Type checking
b) Type coercing
c) Type manipulation
d) None of the given options

Ans: b)

10. The type expression (Integer X Real) → (Integer → Real) corresponds to

a) A function that takes an integer and a real as arguments and returns an integer and a real
b) A function that takes an integer and a real as arguments and returns a real
c) A function that takes an integer and a real as arguments and returns an integer
d) A function that takes an integer and a real as arguments and returns a function that takes an integer and returns a real

Ans: d)

END of Assignment

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Compiler Design

Assignment- Week 9

TYPE OF QUESTION:MCQ

Number ofquestions:10 Total mark: 10 X 1 = 10

1. Self-organizing list based symbol tables may show better performance due to

   a) Locality of input program
   b) Locality of compiler
   c) Both locality of input program and compiler
   d) None of the given options

   Ans: a)

2. Most frequent operation on a symbol table is

   a) Insert
   b) Delete
   c) Modify
   d) Lookup

   Ans: d)

3. Motivation behind using self-organizing list for symbol table is

   a) Ease of implementation
   b) Program locality
   c) Insertion of symbols
   d) None of the other options

   Ans: b)

4. To minimize access time, symbol table should be organized as

   a) Linear table
   b) Tree
   c) Hash table
   d) Circular list

   Ans: c)

5. Activation record stores

   a) Parameters
   b) Local variables

c) Parameters and local variables
d) Parameters , local variables and code for procedures

Ans: c)

6. Which of the following phases of compiler does NOT use symbol table?

a) Semantic analysis
b) Code generation
c) Code optimization
d) None of the given options

And: d)

7. If two types have same name they can be

a) Name equivalent
b) Structurally equivalent
c) Both name and structurally equivalent
d) May not be name equivalent

Ans: c)

8. One symbol table per scope is suited for

a) Single-pass compilers
b) Multi-pass compilers
c) Both single and multi-pass compilers
d) None of the given options

Ans: a)

9. Symbol table data is filled by

(A) Lexical analyzer
(B) Parser
(C) Both lexical analyzer and parser
(D) Neither lexical analyzer nor parser

Ans: c)

10. Which of the following is NOT likely to be kept in a symbol table?

(A) Name
(B) Location
(C) Scope
(D) None of the other options

Ans: d)

END of Assignment

NPTEL Online Certification Courses Indian

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Compiler Design

Assignment- Week 10

TYPE OF QUESTION:MCQ

Number ofquestions:10 Total mark: 10 X 1 = 10

1. Which of the following is NOT possible to realize if activation record is static

   (A) Passing parameters
   (B) Creating local variables
   (C) Supporting recursion
   (D) None of the other options

   Ans: c)

2. Control link points to the

   (A) Current activation record
   (B) Parent activation record
   (C) Child activation record
   (D) None of the other options

   Ans: b)

3. Intermediate code generation for a compiler is

   (A) Must
   (B) Optional
   (C) Depends on language
   (D) None of the other options

   Ans: b)

4. P-code is used for

   (A) Stack-based machine
   (B) Accumulator based machine
   (C) Two operand addresses
   (D) None of the other options

   Ans: a)

5. In the activation record, local variables can be accessed from frame pointer with offset value

   (A) Positive
   (B) Negative
   (C) May be positive or negative
   (D) Cannot be accessed

   Ans: b)

6. Access link points to the

   (A) Current activation record
   (B) Parent activation record
   (C) Child activation record
   (D) None of the other options

   Ans: d)

7. If pointer is supported in the high-level language,

   (A) Must also be supported in the intermediate language
   (B) May not be supported in the intermediate language
   (C) Depends on language
   (D) None of the other options

   Ans: a)

8. Frame pointer points to the

   (A) Current activation record
   (B) Parent activation record
   (C) Child activation record
   (D) None of the other options

   Ans: a)

9. “Display” helps to locate easily

   (A) Local variables
   (B) Global variables
   (C) Non-local variables
   (D) All of the other options

   Ans: c)

10. An intermediate language should be

    (A) Close to target machine
    (B) Machine independent
    (C) All operators of high-level language supported
    (D) All of the other options

    Ans: d)

END of Assignment

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Compiler Design

Assignment- Week 11

TYPE OF QUESTION:MCQ

Number ofquestions:10 Total mark: 10 X 1 = 10

1. For the rule S → L := E, if L is a single variable, L.place is equal to

   (A) Null
   (B) Some value
   (C) Constant
   (D) None of the other options

   Ans: A

2. For Boolean variable B, B.truelist contains

   (A) List of locations at which B is true
   (B) List of locations to jump to if B is true
   (C) List of locations at which B is true and the locations to branch to
   (D) None of the other options

   Ans: A

3. When code is generated for "a < b and c > d", the locations left for backpatching are

   (A) falselist of a < b
   (B) falselist of a < b and falselist of c > d
   (C) falselist of a < b, falselist of c > d, truelist of c > d
   (D) truelist of a < b, falselist of a < b, truelist of c > d, falselist of c > d

   Ans: C

4. In three-address code, arrays are

   (A) Not supported
   (B) One dimensional
   (C) More than one dimensional
   (D) Supported via pointers

   Ans: B

5. For three address code generation of “B → B1 or M B2”, M.quad is used to backpatch

   (A) B1.truelist
   (B) B1.falselist
   (C) B2.truelist
   (D) B2.falselist

   Ans: B

6. For the rule B → B1 and B2, the operation "B1.false = B.false" requires two passes as

(A) B1.false is not known
(B) B.false is not known
(C) Both B1.false and B.false are unknown
(D) None of the other options
Ans: B

7. In the rule B → B1 or MB2, the nonterminal M is used to remember the start address of

(A) B
(B) B1
(C) Both B1 and B
(D) None of the other options
Ans: D

8. In the rule S → if B then M S N else M S, N is used to generate a jump after

(A) then-part
(B) else-part
(C) both then- and else-part
(D) None of the other options
Ans: A

9. In the rule S →if B then M S1, M holds the start address for

(A) S1
(B) S
(C) B
(D) None of the other options
Ans: A

10. For three address code generation of rule "S → while M1 B do M2 S1", B.falselist is backpatched with

(A) M1.quad
(B) M2.quad
(C) Cannot be backpatched at this point
(D) None of the other options
Ans: C

END of Assignment

Unit 14 - Week 12

Assignment 12

The due date for submitting this assignment has passed.
As per our records you have not submitted this assignment.

Due on 2020-04-22, 23:59 IST.

1) Backpatching is needed to generate intermediate code using *1 point*

○ (A) Single pass
○ (B) Two passes
○ (C) Multiple passes
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(A) Single pass

2) Jump table is suitable for *1 point*

○ (A) Small number of cases
○ (B) Large number of cases
○ (C) Any number of cases
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Large number of cases

3) If case values are widely spaced, it is better to use *1 point*

○ (A) Jump table
○ (B) Table search
○ (C) Either jump table or simple table
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Table search

4) Function call actions are divided into sequences *1 point*

○ (A) Calling and return
○ (B) Calling and composition
○ (C) Return and composition
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(A) Calling and return

5) Evaluation of actual parameters is done by *1 point*

○ (A) Callee
○ (B) Caller
○ (C) Both Caller and Callee
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Caller

6) Register saving is done by *1 point*

○ (A) Callee
○ (B) Caller
○ (C) Both Caller and Callee
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(A) Callee

7) Local storage is created by *1 point*

○ (A) Callee
○ (B) Caller
○ (C) Both Caller and Callee
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(A) Callee

8) For a switch statement, the expression can result into values in the range -5 to +6. Number of entries in the jumptable should be *1 point*

○ (A) 5
○ (B) 6
○ (C) 11
○ (D) 12

No, the answer is incorrect.
Score: 0
Accepted Answers:
(D) 12

9) For a switch statement implemented as a jumptable, default_case is *1 point*

○ (A) A part of jumptable
○ (B) Not a part of jumptable
○ (C) in the middle of the jumptable
○ (D) at the beginning of the jumptable

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Not a part of jumptable

10) For pair of goto based storage allocation for functions, the second goto statement transfers control to the beginning of *1 point*

○ (A) Storage space
○ (B) Function code
○ (C) Program
○ (D) None of the other options

No, the answer is incorrect.
Score: 0
Accepted Answers:
(B) Function code