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 E-mail: moodle@na.edu



**NORTH AMERICAN
UNIVERSITY**
INSPIRATION INNOVATION GLOBAL COMPETENCE



Islam Kamilov ▾



Dashboard > My courses > COMP > COMP 3320.Programming Languages.2017SPR.s1 > 6 March -
12 March > Midterm

Started on	Monday, 6 March 2017, 1:00 PM
State	Finished
Completed on	Monday, 6 March 2017, 1:30 PM
Time taken	30 mins 31 secs
Marks	30.00/30.00
Grade	100.00 out of 100.00

Question 1

Correct

Mark 1.00 out of 1.00

_____ is non-procedural and based on formal logic.

Select one:

- ☐ a. Ada
- ☐ b. Algol
- ☒ c. Prolog ✓
- ☐ d. Lisp
- ☐ e. C

Your answer is correct.

The correct answer is: Prolog

Question 2

Correct

Mark 1.00 out of 1.00

What are the common characteristics of APL and SNOBOL?

Select one:

- ☐ a. Orthogonal Design
- ☐ b. Static typing and static storage
- ☒ c. Dynamic typing and dynamic storage ✓
- ☐ d. Object oriented

Your answer is correct.

The correct answer is: Dynamic typing and dynamic storage

Question 3

Correct

Mark 1.00 out of 1.00

The sentences of the language are generated through a sequence of applications of the rules, beginning with a special nonterminal of the grammar called the start symbol. This sequence of rule applications is called a derivation.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 4

Correct

Mark 1.00 out of 1.00

What is the legendary programming language that is especially used for AI?

Select one:

- ☐ a. Fortran
- ☐ b. Algol
- ☒ c. Lisp ✓
- ☐ d. AWK
- ☐ e. Pascal

Your answer is correct.

The correct answer is: Lisp

Question 5

Correct

Mark 1.00 out of 1.00

There are three reasons why lexical analysis is separated from syntax analysis. Which one of the following is not one of them?

Select one:

- ☒ a. Cost ✓
- ☐ b. Simplicity
- ☐ c. Portability
- ☐ d. Efficiency

Your answer is correct.

The correct answer is: Cost

Question 6

Correct

Mark 1.00 out of 1.00

What is the front end of a syntax analyzer?

Select one:

- ☐ a. Context-free grammars
- ☐ b. Semantic Analyzer
- ☒ c. Lexical analyzer ✓
- ☐ d. Attribute Grammars

Your answer is correct.

The correct answer is: Lexical analyzer

Question 7

Correct

Mark 1.00 out of 1.00

What is the first AI language?

Select one:

- ☐ a. FORTRAN
- ☐ b. JAVA
- ☒ c. LISP ✓
- ☐ d. PYTHON

Your answer is correct.

The correct answer is: LISP

Question 8

Correct

Mark 1.00 out of 1.00

A metalanguage is a language that is used to describe another language. BNF is a metalanguage for programming languages.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 9

Correct

Mark 1.00 out of 1.00

Why source code usage was developed instead of using object/machine code?

Select one:

- ☐ a. Machine code has poor readability
- ☐ b. Machine code has no indexing
- ☒ c. All of them ✓
- ☐ d. Machine code was hard to modify

Your answer is correct.

The correct answer is: All of them

Question 10

Correct

Mark 1.00 out of 1.00

A recursive-descent parser is so named because it consists of a collection of subprograms, many of which are recursive, and it produces a parse tree in top-down order.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 11

Correct

Mark 1.00 out of 1.00

Dynamic semantics deals with the meaning of expressions, statements, and program units.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 12

Correct

Mark 1.00 out of 1.00

_____ first used in Fortran IV.

Select one:

- ☐ a. All
- ☐ b. Pointers
- ☒ c. Explicit data type declarations ✓
- ☐ d. Arrays

Your answer is correct.

The correct answer is: Explicit data type declarations

Question 13

Correct

Mark 1.00 out of 1.00

Which one is the pure object oriented programming language?

Select one:

- ☐ a. Snobol
- ☒ b. Smalltalk ✓
- ☐ c. Basic
- ☐ d. Algol
- ☐ e. Ada

Your answer is correct.

The correct answer is: Smalltalk

Question 14

Correct

Mark 1.00 out of 1.00

What is the first Programming Language?

Select one:

- ☐ a. Algol 58
- ☐ b. Fortran I
- ☐ c. APL
- ☒ d. Zuse's Plankalkul ✓

Your answer is correct.

The correct answer is: Zuse's Plankalkul

Question 15

Correct

Mark 1.00 out of 1.00

Assume the following non-terminals are given: $\langle \text{type} \rangle$, $\langle \text{id} \rangle$, $\langle \text{literal} \rangle$, $\langle \text{assign} \rangle$, $\langle \text{expr} \rangle$, and $\langle \text{stmt_list} \rangle$.

Which of following cannot be written with this grammar:

$\langle \text{for} \rangle \rightarrow \text{for '([}\langle \text{type} \rangle \langle \text{id} \rangle = \langle \text{expr} \rangle \{, [\langle \text{type} \rangle \langle \text{id} \rangle = \langle \text{expr} \rangle\}}; [\langle \text{expr} \rangle]; [\langle \text{expr} \rangle \{, \langle \text{expr} \rangle\}} \text{' '}\langle \text{stmt_list} \rangle \text{' '}$

Select one:

- ☐ a.
- ```
for (int i = 0; i < n; i++)
{
 a = a + 2;
}
```
- ☒ b.
- ```
for ( i = 0, i < n, i++);  
{  
    a = a + 1;  
} ✓
```
- ☐ c. for (int k = 0, m = 100; k < n; k++, m++)
- ```
{
 a = a + 1;
}
```
- ☐ d.
- ```
for (int i = 0; i < k; i++)  
{  
    a = a * 2;  
}
```

Your answer is correct.

The correct answer is:

```
for ( i = 0, i < n, i++);  
{  
    a = a + 1;  
}
```

Question 16

Correct

Mark 1.00 out of 1.00

Which programming language was designed for IBM 704 machine that takes advantage of the floating point hardware calculations instead of software calculations.

Select one:

- ☐ a. C
- ☐ b. Algol
- ☒ c. Fortran ✓
- ☐ d. Smalltalk
- ☐ e. Java

Your answer is correct.

The correct answer is: Fortran

Question 17

Correct

Mark 1.00 out of 1.00

Syntax analysis is often called parsing.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 18

Correct

Mark 1.00 out of 1.00

Please match the steps for Hybrid Implementation process.

- Step 3 ✓
- Step 4 ✓
- Step 5 ✓
- Step 6 ✓
- Step 1 ✓
- Step 2 ✓

Your answer is correct.

The correct answer is: Step 3 → Syntax Analyzer, Step 4 → Intermediate Code Generator, Step 5 → Interpreter, Step 6 → Result, Step 1 → Source Program, Step 2 → Lexical Analyzer

Question 19

Correct

Mark 1.00 out of 1.00

What is the legendary programming language that is especially used for scientific calculations?

Select one:

- ☐ a. Scitran
- ☐ b. Cobol
- ☒ c. Fortran ✓
- ☐ d. AWK
- ☐ e. Algol

Your answer is correct.

The correct answer is: Fortran

Question 20

Correct

Mark 1.00 out of 1.00

Which programming language specifically had the following contributions?

- First unit-level concurrency
- First exception handling
- Switch-selectable recursion
- First pointer data type
- First array cross sections

Select one:

- ☐ a. COBOL
- ☒ b. PL/I ✓
- ☐ c. BASIC
- ☐ d. ALGOL

Your answer is correct.

The correct answer is: PL/I

Question 21

Correct

Mark 1.00 out of 1.00

Type compatibility can be checked in context-free grammars.

Select one:

- ☐ True
- ☒ False ✓

Attribute grammar can check type compatibility.

The correct answer is 'False'.

Question 22

Correct

Mark 1.00 out of 1.00

In the following grammar we can say that:

$$\langle \text{assign} \rangle \rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$$
$$\langle \text{id} \rangle \rightarrow A \mid B \mid C$$
$$\langle \text{expr} \rangle \rightarrow \langle \text{expr} \rangle + \langle \text{term} \rangle$$
$$\mid \langle \text{term} \rangle$$
$$\langle \text{term} \rangle \rightarrow \langle \text{term} \rangle * \langle \text{factor} \rangle$$
$$\mid \langle \text{factor} \rangle$$
$$\langle \text{factor} \rangle \rightarrow (\langle \text{expr} \rangle)$$
$$\mid \langle \text{id} \rangle$$

Select one:

- ☒ a. * has precedence over + ✓
- ☐ b. + has precedence over *
- ☐ c. + and * have same precedence
- ☐ d. we cannot say anything about their precedence

Your answer is correct.

The correct answer is: * has precedence over +

Question 23

Correct

Mark 1.00 out of 1.00

What does the following attribute grammar mean:

Syntax rule: `<fun_def> → function <fun_name>[1]`

`<fun_body> end <fun_name>[2];`

Predicate: `<fun_name>[1].string == <fun_name>[2].string`

Select one:

- ☐ a. Functions should have two variables
- ☐ b. Functions cannot be defined without variables
- ☒ c. The name on the end of a function must match the functions name ✓
- ☐ d. Syntax rule should come before predicate rule when writing in that programming language

Your answer is correct.

The correct answer is: The name on the end of a function must match the functions name

Question 24

Correct

Mark 1.00 out of 1.00

What is the legendary programming language that is especially used for business purposes?

Select one:

- ☐ a. Fortran
- ☐ b. Algol
- ☐ c. AWK
- ☐ d. Pascal
- ☒ e. Cobol ✓

Your answer is correct.

The correct answer is: Cobol

Question 25

Correct

Mark 1.00 out of 1.00

EBNF is ideally suited for recursive-descent parsers.

Select one:

- ☒ True ✓
- ☐ False

The correct answer is 'True'.

Question 26

Correct

Mark 1.00 out of 1.00

If ($a > b$)

 print "Yes"

This logic had been implemented in which programming language first?
(conditional branching)

Select one:

- ☐ a. C
- ☒ b. Speedcoding ✓
- ☐ c. ALGOL
- ☐ d. APL
- ☐ e. Fortran

Your answer is correct.

The correct answer is: Speedcoding

Question 27

Correct

Mark 1.00 out of 1.00

The following grammar cannot produce?

 $\langle \text{assign} \rangle \rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$ $\langle \text{id} \rangle \rightarrow A \mid B \mid C$ $\langle \text{expr} \rangle \rightarrow \langle \text{expr} \rangle + \langle \text{term} \rangle$ $\mid \langle \text{term} \rangle$ $\langle \text{term} \rangle \rightarrow \langle \text{term} \rangle * \langle \text{factor} \rangle$ $\mid \langle \text{factor} \rangle$ $\langle \text{factor} \rangle \rightarrow (\langle \text{expr} \rangle)$ $\mid \langle \text{id} \rangle$

Select one:

- ☒ a. $A = (A+B) * 3$ ✓
- ☐ b. $A = (B+B) * C$
- ☐ c. $A = (A+B) * C$
- ☐ d. $C = (A + (C + C)) * C$

Your answer is correct.

The correct answer is: $A = (A+B) * 3$

Question 28

Correct

Mark 1.00 out of 1.00

A grammar that generates a sentential form for which there are two or more distinct parse trees is said to be _____.

Select one:

- ☐ a. unambiguous
- ☐ b. readable
- ☒ c. ambiguous ✓
- ☐ d. flexible

Your answer is correct.

The correct answer is: ambiguous

Question 29

Correct

Mark 1.00 out of 1.00

A top-down parser builds a parse tree in _____.

Select one:

- ☐ a. postorder
- ☒ b. preorder ✓
- ☐ c. inorder
- ☐ d. no order

Your answer is correct.

The correct answer is: preorder

Question 30

Correct

Mark 1.00 out of 1.00

_____ designed for teaching structured programming.

Select one:

- ☐ a. Fortran
- ☐ b. Ada
- ☐ c. C
- ☐ d. Snobol
- ☒ e. Pascal ✓

Your answer is correct.

The correct answer is: Pascal