**COMPUTER PROGRAMMING CONCEPTS**

**(390)**

# —OPEN EVENT—

**REGIONAL – 2016**

# DO NOT WRITE ON TEST BOOKLET

***TOTAL POINTS (100)***

**Failure to adhere to any of the following rules will result in disqualification:**

1. **Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.**
2. **No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.**
3. **Electronic devices will be monitored according to ACT standards.**

No more than 60 minutes testing time

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*Workplace Skills Assessment Program* competition.

**Identify the letter of the choice that best completes the statement or answers the question. Mark A if the statement is true. Mark B if the statement is false.**

1. is a tool programmers use to combine object files into a single file.
   1. Linker
   2. Compiler
   3. Debugger
   4. Library
2. The of a language is the set of rules that must be followed to use the language correctly.
   1. flow
   2. semantics
   3. instructions
   4. syntax
3. Given the following pseudo-code, what is the value of “m” following execution?

a = 5

b = 5

c = 8

If (a >= b) Then If (a != c)

Then m = 1 Else

m = 2 End If

Else

If (c != 0) Then m = 3

Else

m = 4 End If

End If

|  |  |
| --- | --- |
| a. | 1 |
| b. | 2 |
| c. | 3 |
| d. | 4 |

1. A terminating node in a flowchart is represented by which shape?
   1. Rectangle
   2. Parallelogram
   3. Oval
   4. Diamond
2. Which of the following is *not* an example of a loop?
   1. While
   2. If Else
   3. For
   4. Do While

6. Evaluate: 4 \* 15 / 6 % 3

|  |  |
| --- | --- |
| a. | 0 |
| b. | 1 |
| c. | 2 |
| d. | Undefined |

1. Define I/O.
   1. Interactive Operations
   2. Independent Operations
   3. Input and Output
   4. Interdependent Operatons
2. What is a variable?
   1. A reference to dynamic information
   2. A randomly generated number
   3. An unchanging constant piece of user-generated data
   4. A slider user-interface control
3. How many bytes are in a 256 bits?

|  |  |
| --- | --- |
| a. | 8 |
| b. | 24 |
| c. | 32 |
| d. | 42 |

1. Who is considered to be the first computer programmer?
   1. Alan Turing
   2. Ada Lovelace
   3. Bill Gates
   4. Tim Berners-Lee
2. Which of the following Boolean expressions does *not* evaluate to true?
   1. (false && (2 < 5 mod 2)) b. (a \* b \* c) = (c \* b \* a)

c. (a = b) || (a != b)

d. (x >= 0) || (x <= 0)

1. A variable defined outside a function is referred to as a ?
   1. Block variable
   2. Function variable
   3. Local variable
   4. Global variable
2. Which of the following is *true* about jagged arrays?
   1. They are single dimensional
   2. Each array can be a different size
   3. Each array must be a different size
   4. All of the above
3. Which of the following is the *correct* way to use standard namespace in C++?
   1. Using namespace standard
   2. Using namespace std
   3. Using standard namespace
   4. Using std namespace
4. The *for* loop is ideal to loop structures that .
   1. must execute some process at least one time
   2. must check the loop condition before the loop body is executed
   3. repeat some process a fixed number of times
   4. do all of the above
5. How many times will the following loop be executed? For i = 14 To 2 Step -3

/\* body of loop \*/

Next i

|  |  |
| --- | --- |
| a. | 3 |
| b. | 4 |
| c. | 5 |
| d. | 14 |

1. &&, ||, AND, OR are examples of what type of operators?
   1. Arithmetic operators
   2. Logical operators
   3. Relational operators
   4. Special operators
2. In many languages, this symbol represents a negation?
   1. &
   2. !
   3. %
   4. #
3. Which of the following is *not* a floating point variable?
   1. double
   2. float
   3. single
   4. int
4. A division by zero error is an example of which type of programming error?
   1. syntax
   2. runtime
   3. logic
   4. none of the above
5. A is a context within a program in which a variable is valid.
   1. syntax
   2. declaration
   3. scope
   4. binding
6. The decimal equivalent to hexadecimal 1F is?

|  |  |
| --- | --- |
| a. | 30 |
| b. | 31 |
| c. | 32 |
| d. | 33 |

1. A void function will return
   1. nothing
   2. a void data type
   3. an integer data type
   4. a string data type
2. What symbol is used to represent a decision in a flowchart?
   1. Square
   2. Circle
   3. Diamond
   4. Triangle
3. What is the result of 73/5? Assume the integer division.

|  |  |
| --- | --- |
| a. | 14 |
| b. | 14.6 |
| c. | 15 |
| d. | 16 |

1. The Unicode value of ‘D’ is 44. What is the Unicode value for ‘X’?

|  |  |
| --- | --- |
| a. | 57 |
| b. | 58 |
| c. | 59 |
| d. | 60 |

1. The value “abc123” is
   1. a language keyword
   2. a Boolean literal
   3. a String literal
   4. None of the above
2. The maximum number an integer can hold is ? a. 2 ^ 8 - 1

b. 2 ^ 16 - 1

c. 2 ^ 32 - 1

d. 2 ^ 64 - 1

1. Which of the following is *not* a software language?
   1. C++
   2. C
   3. HTML
   4. Visual Basic
2. Software that can run across multiple operating systems is called:
   1. cross platform applications
   2. cross operating system applications
   3. reusable code
   4. independent code
3. The Boolean expression (A || B) && A is True
   1. only when A is True
   2. only when B is True
   3. when either A is True or B is True
   4. for all values of A and B
4. A series of logically ordered steps that lead to a required result is called a(n)

.

* 1. data structure
  2. algorithm
  3. compiler
  4. program

1. The first element in an array has an index of:

|  |  |
| --- | --- |
| a. | -1 |
| b. | 0 |
| c. | 1 |
| d. | 2 |

1. It is cold outside. It is raining. It is not windy. Which is the following is *true*?
   1. raining OR NOT (cold outside)
   2. NOT (windy) XOR cold outside
   3. NOT (raining AND cold outside)
   4. NOT (raining OR NOT(windy))
2. Which of the following is *not* something you would commonly use during the application debug phase?
   1. tracing
   2. stepping
   3. deployment
   4. breakpoints
3. In a switch statement block, the case executes if none of the other cases were satisfied.
   1. loop
   2. break
   3. else
   4. default
4. In many programming languages, you must a variable before you can use it.
   1. declare
   2. terminate
   3. name
   4. utilize
5. Of the following, which is the *fastest* non-volatile storage type?
   1. HDD
   2. RAM
   3. ROM
   4. SSD
6. What is the output of the following pseudocode? choice = ‘c’

switch (choice) { case ‘A’:

‘a’: print “Good Job“ break

case ‘B’:

‘b’:

‘c’: print “Average” break

case ‘C’: print “Try Again?” break

}

* 1. Nothing
  2. “Good Job”
  3. “Average”
  4. “Try Again?”

1. Variables are considered to be non-volatile.
   1. True
   2. False
2. The language which is *best* known for mathematical models is?
   1. BASIC
   2. Java
   3. FORTRAN
   4. COBOL
3. What operator comes first in the order of operations?
   1. multiplication
   2. division
   3. exponents
   4. parentheses
4. Which of the following expressions results in the value 3?

|  |  |
| --- | --- |
| a. | 1 % 4 |
| b. | 38 % 7 |
| c. | 22 % 3 |
| d. | 33 % 3 |

1. Which term describes the act of creating an object or class based on another object or class?
   1. encapsulation
   2. inheritance
   3. recursion
   4. polymorphism
2. RSS, ATOM, and XHTML are all based on which of the following documenting syntax?
   1. JavaScript
   2. HTML
   3. COBOL
   4. XML
3. Which of the following is the “not greater than or equal to” comparison operator? a. !(>)

b. !(>=)

c. !(=>)

d. !(>>)

1. In an interpreted language, compiler warnings will prevent an application from running?
   1. True
   2. False
2. Which of the following is *not* used as a symbol to comment lines in a programming language?
   1. //
   2. #
   3. ‘
   4. ;
3. What is the result of (“3^2”)?
   1. 9
   2. 6

c. “3^2”

d. “9”

1. Which expression is commonly used to increment the numeric value of a variable on one unit?

a. +=

b. +

c. ++

d. =+