COMPUTER PROGRAMMING CONCEPTS

(390)

—OPEN EVENT—

REGIONAL – 2019

DO NOT WRITE ON TEST BOOKLET

***TOTAL POINTS (100 points)***

**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 sixty (60) minutes testing time

Property of Business Professionals of America.

May be reproduced only for use in the Business Professionals of America

*Workplace Skills Assessment Program* competition.

**MULTIPLE CHOICE**

Identify the choice that best completes the statement or answers the question.

1. A terminating node in a flowchart is represented by which shape?
   1. Rectangle
   2. Parallelogram
   3. Oval
   4. Diamond
2. A void function will return \_\_\_\_\_\_\_\_\_\_.
   1. a void data type
   2. a string data type
   3. nothing
   4. an integer data type
3. What symbol is used to represent a decision in a flowchart?
   1. Diamond
   2. Circle
   3. Triangle
   4. Square
4. What is the unique name of a Web document that a browser needs to find and display?
   1. Website
   2. HTML
   3. URL
   4. WWW
5. What is the purpose of writing a program?
   1. Make a game
   2. Solve a problem
   3. Make a calculator
   4. Communicate with a friend
6. What is used to help the people who read code understand what the programmer had in mind?
   1. Identifiers
   2. Syntax
   3. Comments
   4. Addresses
7. What is a software tool that loads and formats Web documents for viewing?
   1. Text Editor
   2. Browser
   3. IDE
   4. Compiler
8. Which of the following is the *first* step in problem solving?
   1. Designing a solution
   2. Testing the solution
   3. Implementing the solution
   4. Understanding the problem
9. What are identifiers/words that have a special meaning in a programming language and can only be used in predefined ways?
   1. Reserved words
   2. Syntax
   3. Comments
   4. String Literals
10. What type of space can make a program easier to read and understand?
    1. Namespace
    2. White Space
    3. Web Space
    4. Black Space
11. Working with a \_\_\_\_\_\_\_\_\_\_ language lets the programmer ignore the details of machine language.
    1. low-level
    2. machine
    3. high-level
    4. assembled-level
12. What is a program that translates code in one language to code in another language all at once?
    1. Interpreter
    2. Translator
    3. Executor
    4. Compiler
13. What is a program that translates code in one language to code in another language one statement at a time?
    1. Interpreter
    2. Translator
    3. Executor
    4. Compiler
14. The \_\_\_\_\_\_\_\_\_\_ rules of a programming language dictate the form of a program.
    1. semantics
    2. syntax
    3. spelling
    4. punctuation
15. The \_\_\_\_\_\_\_\_\_\_ dictate the meaning of the program statements.
    1. semantics
    2. syntax
    3. spelling
    4. punctuation
16. Computers carry out lists of instructions called \_\_\_\_\_\_\_\_\_\_.
    1. bytecode
    2. programs
    3. networks
    4. applets
17. Which of the following is *not* an example of a loop?
    1. For
    2. Do While
    3. If Else
    4. While
18. Define I/O.
    1. Interdependent Operations
    2. Interactive Operations
    3. Independent Operations
    4. Input and Output
19. Who is considered to be the first computer programmer?
    1. Bill Gates
    2. Tim Berners-Lee
    3. Ada Lovelace
    4. Alan Turing
20. What language consists of 1s and 0s?
    1. Java
    2. Visual Basic
    3. C++
    4. Binary
21. Which of the following could be a machine language instruction?
    1. goto 200
    2. printf(“hello”)
    3. mov ax, 0002
    4. 011001 101100 001010 011010 111000 111000
22. When one sequence structure is placed inside another sequence structure, it is called a(n) \_\_\_\_\_\_\_\_\_\_ structure.
    1. internal
    2. case
    3. nested
    4. joined
23. A \_\_\_\_\_\_\_\_\_\_ is a single item of information about a person, place or thing.
    1. database
    2. record
    3. key
    4. field
24. A \_\_\_\_\_\_\_\_\_\_ variable is visible to all parts of a program.
    1. local
    2. global
    3. hidden
    4. temporary
25. A \_\_\_\_\_\_\_\_\_\_ variable is only visible in the function or subroutine where it is defined.
    1. local
    2. global
    3. hidden
    4. temporary
26. What is the value of x immediately after the following code is executed?

int x = 5

x = x / 6

* 1. 1
  2. 5
  3. 3
  4. 0

1. Which problem domain might contain the objects (orders, specials, supplier contacts)?
   1. building a home
   2. managing a restaurant
   3. packing a suitcase
   4. writing a paper
2. What does OOP stand for?
   1. Objective Object Programming
   2. Optional Object Programming
   3. Obtuse Oriented Programming
   4. Object Oriented Programming
3. Even though it is a supported statement, using it produces ‘spaghetti’ code. Which statement is being referred to?
   1. end
   2. goto
   3. exit
   4. break
4. What is the name of the program structure in which a block of statements are repeated?
   1. Selection
   2. Sequence
   3. Iterative
   4. Infinite
5. What is the name of the program structure where you perform an action or task and then you perform the next action or task in order?
   1. Selection
   2. Sequence
   3. Iterative
   4. Infinite
6. What is the name of the program structure where you perform an action or task and then you make a decision of which action or task to perform next?
   1. Selection
   2. Sequence
   3. Iterative
   4. Infinite
7. What are sequences of characters that make up a word or sentence called?
   1. Variable
   2. String
   3. Constant
   4. Primitive
8. Memory locations whose values can change as the program is running are called?
   1. Primitive
   2. Global
   3. Constant
   4. Variable
9. At least one of the conditions connected by the \_\_\_\_\_\_\_\_\_\_ operator must be true for the compound conditional to be true.
   1. AND
   2. NOT
   3. OR
   4. Both A and B
10. What symbol is used to represent output in a flowchart?
    1. Square
    2. Parallelogram
    3. Circle
    4. Triangle
11. Computer Programmers often refer to a memory address using \_\_\_\_\_\_\_\_\_\_ notation or base
    1. indirect
    2. binary
    3. mathematical
    4. hexadecimal
12. Which of the following is true of naming variables?
    1. Variable names can have spaces
    2. Variable names can begin with numbers
    3. Variable names may contain an underscore
    4. Variable names may also be language keywords
13. When a loop control variable is *not* altered during loop execution, a(n) \_\_\_\_\_\_\_\_\_\_ loop may result.
    1. enlarged
    2. broken
    3. infinite
    4. default
14. People who use computer programs are called \_\_\_\_\_\_\_\_\_\_?
    1. stakeholders
    2. end users
    3. programmers
    4. managers
15. In a \_\_\_\_\_\_\_\_\_\_ program, the user sees a screen and can typically make selections using a mouse or other pointing device.
    1. modular
    2. GUI
    3. reusable
    4. command-line
16. Desk-checking is also called \_\_\_\_\_\_\_\_\_\_.
    1. prototyping
    2. beta checking
    3. alpha checking
    4. hand-tracing
17. A post-test loop will always \_\_\_\_\_\_\_\_\_\_
    1. execute the code block at least twice
    2. execute the code block at least once
    3. run until its counter reaches zero
    4. run until its counter becomes a negative value
18. Some programming languages do not allow you to divide \_\_\_\_\_\_\_\_\_\_
    1. floating-point numbers
    2. by 1
    3. an integer by a floating-point number
    4. by zero
19. Operators that have two operands are called \_\_\_\_\_\_\_\_\_\_
    1. unary operators
    2. binary operators
    3. operators
    4. expressions
20. \_\_\_\_\_\_\_\_\_\_ is the process where the compiler temporarily changes a variable’s data type to perform a calculation.
    1. Typecasting
    2. Advancement
    3. Adaption
    4. Promotion
21. A program with a(n) \_\_\_\_\_\_\_\_\_\_ never ends.
    1. decision symbol
    2. nonterminated condition
    3. variable
    4. infinite loop
22. An overflow condition occurs when \_\_\_\_\_\_\_\_\_\_
    1. a value is too large for its data type
    2. a decimal value is stored into an integer field
    3. too many variables are defined in one program
    4. an integer is divided by a floating-point number
23. Infinite loops are examples of \_\_\_\_\_\_\_\_\_\_ errors.
    1. logic
    2. run-time
    3. syntax
    4. none of the above
24. Which type of build message occurs when you declare a variable but don’t use it in your program?
    1. syntax error message
    2. compiler error message
    3. warning message
    4. logic error message