

DO NOT WRITE ON TEST



**COMPUTER
PROGRAMMING
CONCEPTS
~OPEN EVENT~**

(390)

REGIONAL 2023

TOTAL POINTS

_____ **100 Points**

Test Time: 60 minutes

Directions: Identify the letter of the choice that *best* completes the statement or answers the question.

1. The number system used by computers that uses digits 0 to 7 is known as what?
 - A. Base-2
 - B. Machine Code
 - C. Hexadecimal
 - D. Base-8
2. The values 'A' to 'F' in Hexadecimal represent which numbers in Base-10?
 - A. 9 to 15
 - B. 10 to 15
 - C. 10 to 16
 - D. 9 to 16
3. ____ refers to the process of hiding the internal details of the objects and their methods.
 - A. Abstraction
 - B. Assumption
 - C. Encapsulation
 - D. Polymorphism
4. How many Bytes does it take to create Kilobyte?
 - A. 8 Bytes
 - B. 1000 Bytes
 - C. 1024 Bytes
 - D. 2048 Bytes
5. Which component manages the input and output operations as specified in the code for a program?
 - A. ROM
 - B. CPU
 - C. RAM
 - D. GPU
6. Which of the following best explains a characteristic of primary/volatile storage?
 - A. It is used to store information temporarily
 - B. It is used to hold instructions being executed
 - C. It holds the address of the next piece of memory being fetched
 - D. It stores all calculations by the arithmetic unit
7. Which of the following best fits this definition: a type of software that performs a specific function for education, personal or business?
 - A. Application software
 - B. Database software
 - C. Spreadsheet software
 - D. Operating System

8. This type of programming language is characterized by executing a sequence of statements that lead to a definitive outcome and controls variable information with less emphasis on functions that return values:
 - A. Procedural
 - B. Functional
 - C. Object Oriented
 - D. Scripting
9. Which of the following is not an example of a high-level programming language?
 - A. Assembly Language
 - B. Fortran
 - C. C
 - D. Python
10. What is the term for a random string of bits that is generated to alter the sequence of the data and then put it back in its intended format?
 - A. Encryption Keys
 - B. Delimiters
 - C. User Data
 - D. Addresses
11. A(n) _____ changes the order in which instructions are carried out by directing the computer to execute an instruction elsewhere in the program.
 - A. sequential execution
 - B. sequence control structure
 - C. formal method
 - D. programming paradigm
12. _____-generation languages, such as COBOL and FORTRAN, were used extensively for business and scientific applications.
 - A. First
 - B. Second
 - C. Third
 - D. Fourth
13. Which term best describes the concept of giving word sets a required order so that the computer can perform a desired function?
 - A. Semantics
 - B. Syntax
 - C. Algorithm
 - D. Logic

14. Which term best describes the use of diagrams to represent the logic of an algorithm that can be programmed?
- A. Control Chart
 - B. Knowledge Map
 - C. Flow Chart
 - D. Graphic Organizer
15. Which type of algorithm calls itself with decreased values as inputs after each instance of it calling itself with inputs?
- A. Recursive
 - B. Divide and Conquer
 - C. Dynamic
 - D. Brute Force
16. What is a benefit of a compiled language?
- A. They are more flexible
 - B. Offer features that allow dynamic typing and smaller program sizes
 - C. The code is platform independent
 - D. They are much faster since there is no overhead when running the code
17. What type of programmer develops the user interfaces in an application?
- A. Frontend developer
 - B. Backend developer
 - C. Full stack developer
 - D. Integration developer
18. What is the best definition of a low-level programming language?
- A. Code that uses drag and drop graphics
 - B. Code that is written directly for the computer hardware
 - C. Code that can be interpreted inside of a browser
 - D. Code that uses natural language to create the algorithms
19. ASCII character sets that are in the range 32 to 126 represent which of the following categories?
- A. Control Characters
 - B. Printable Characters
 - C. ISO-8859-1 Programming Set
 - D. HTML Symbol Entities
20. How many Kilobytes in binary does it take to create Megabyte?
- A. 1024 Megabytes
 - B. 1024 Kilobytes
 - C. 1024 Bytes
 - D. 2048 Kilobytes

21. What is the technology that creates character encoding?
- A. Unicode
 - B. Polymorphism
 - C. Data Abstraction
 - D. Universal Translation Code
22. What best explains the functions of the control unit in a CPU?
- A. Manages the calculations and deployment for creation of 3D graphics
 - B. In charge of all logical operations
 - C. In charge of all arithmetic calculations
 - D. In charge of all operations that need to be carried out and communicated with the ALU and memory
23. What type of storage is used to store data for long periods of time?
- A. Volatile Storage
 - B. Primary Storage
 - C. Temporary Storage
 - D. Non-Volatile Storage
24. This type of software allows the user to display their thoughts and ideas in a structured format through the use of slides that use graphics, text, and videos:
- A. Spreadsheet software
 - B. Presentation software
 - C. Graphic software
 - D. Database software
25. This type of programming language is characterized by storing data and prefers recursion instead of loops; these languages also focus on returning values of functions.
- A. Procedural
 - B. Functional
 - C. Object Oriented
 - D. Scripting
26. How many bytes does it take to create the word CAT?
- A. 1 Byte
 - B. 2 Bytes
 - C. 3 Bytes
 - D. 4 Bytes
27. What is the process of using the behaviors and attributes of a higher order class?
- A. Divide and conquer
 - B. Encapsulation
 - C. Inheritance
 - D. Polymorphism

28. Which definition best describes an object in OOP?
- A. One occurrence of a common data type
 - B. Data that has been type-casted
 - C. Combines data and the methods that act on the data
 - D. Breaking abstract details into less complicated forms
29. In a repetition control structure, the computer is directed to repeat one or more instructions until a certain condition is met. The section of code that repeats is usually referred to as a(n) _____.
- A. algorithm
 - B. compiler
 - C. iteration
 - D. rule
30. Which of the following is a characteristic of a constructor?
- A. Is called when an object is being instantiated
 - B. It is not a void method
 - C. It does not return any data
 - D. All of the other answers are correct
31. The human-readable version of a program created in a high-level language by a programmer is called _____.
- A. source code
 - B. op code
 - C. object code
 - D. structured English
32. Application programmers specialize in developing system software such as operating systems, device drivers, security modules, and communications software.
- A. True
 - B. False
33. Which of the following is *not* a programming paradigm?
- A. Declarative
 - B. Procedural
 - C. Object-Oriented
 - D. Predictive
34. In an object-oriented program, the objects don't interact.
- A. True
 - B. False

35. A(n) _____ tells a computer what to do based on whether a condition is true or false.
- A. sequence control structure
 - B. selection control structure
 - C. repetition control structure
 - D. walkthrough
36. Microprocessors only understand machine language, so there must be some way to convert assembly language instructions into 1's and 0's.
- A. True
 - B. False
37. An API is a set of application or operating system functions that programmers can add to the programs they create.
- A. True
 - B. False
38. A(n) _____ converts all the statements in a program in a single batch, and the resulting collection of instructions, called _____, is placed in a new file.
- A. constant, variable
 - B. object code, compiler
 - C. compiler, object code
 - D. interpreter, compiler
39. A programming language that supports the procedural paradigm is called a declarative language.
- A. True
 - B. False
40. A(n) _____ is a section of code that is part of a program, but is *not* included in the main sequential execution path.
- A. function
 - B. goto
 - C. selection
 - D. iteration
41. What value is stored by the statement: `double ans = 121/5?`
- A. 24
 - B. 24.0
 - C. 1
 - D. 1.0

42. What value is stored by the statement: `int ans = (int)(121.0/5)?`
- A. 24.2
 - B. 24.0
 - C. 24
 - D. 0
43. What value is stored by the statement: `double d = 121 % 3?`
- A. 1
 - B. 40
 - C. 4.3
 - D. 1.0
44. The instructions that make up a computer program are sometimes referred to as _____.
- A. code
 - B. control
 - C. encapsulation
 - D. function
45. Another way to express an algorithm is with pseudocode.
- A. True
 - B. False
46. Which programming language is an interpreted language most used for client-side web scripting, such as animating page elements and validating input on HTML forms?
- A. Prolog
 - B. Pythod
 - C. Java
 - D. Javascript
47. Which of the following is the best definition of an SQL database?
- A. An organized form of data situated for easy access, control, and managing
 - B. An unorganized storage system of data situated for quick access, control, and managing
 - C. A decentralized network of data on block chains for easy access, control, and managing
 - D. A management system for computational algorithms that increase the overall speed and efficiency of network communication

48. A simple example of a repetition control structure is the if...else command.

- A. True
- B. False

49. The goto command is rarely used by skilled programmers because it can lead to programs that are difficult to understand and maintain.

- A. True
- B. False

50. What will be displayed by the method call *readyBPA(6,20)*?

```
public static void readyBPA(int x, int y)
{
    if (x <= y)
    {
        print(x + " ");
        readyBPA(x+2, y-1);
    }
}
```

- A. 6 8
- B. 6 8 10
- C. 6 8 10 12
- D. 6 8 10 12 14