

DO NOT WRITE ON TEST



**INFORMATION
TECHNOLOGY CONCEPTS
~OPEN EVENT~
(391)
REGIONAL 2026**

CONCEPT KNOWLEDGE:

Multiple Choice (50 @ 2 points each)

_____ (100 points)

Test Time: 60 minutes

GENERAL GUIDELINES

Failure to follow any of these rules may result in disqualification:

1. **Submission Requirements:** Contestants must submit this test booklet along with any printouts.
2. **Permitted Items:** Only the equipment, supplies, and materials specified for this event are allowed in the testing area. Previous BPA tests and sample tests (whether handwritten, photocopied, or typed) are not permitted.
3. **Electronic Devices:** Electronic devices will be monitored according to ACT standards.

Multiple Choice Questions

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

1. Which of the following programming paradigms emphasizes immutability and function purity?
 - A. Object-Oriented programming
 - B. Procedural programming
 - C. Functional programming
 - D. Logical programming
2. Which type of interface allows users to interact with the OS using icons and windows?
 - A. Command-line interface
 - B. Graphical user interface
 - C. Batch interface
 - D. Scripted interface
3. What is the purpose of a firewall in the context of network security?
 - A. Block unauthorized access
 - B. Speed up internet connection
 - C. Enhance file storage
 - D. Improve hardware performance
4. Which of the following is NOT a programming language?
 - A. Python
 - B. HTML
 - C. JPEG
 - D. Java
5. Who is the creator of the JavaScript programming language?
 - A. Brendan Eich
 - B. Larry Page
 - C. Bill Gates
 - D. Mark Zuckerberg
6. Which of the following is an exclusive feature of object-oriented programming?
 - A. Inheritance
 - B. Loops
 - C. Functions
 - D. Recursion

7. Vector graphics are best suited for which of the following?
 - A. Photographs
 - B. Complex textures
 - C. Scalable icons and logos
 - D. Raster images
8. Which of the following is NOT a characteristic of a high-level programming language?
 - A. Easy to read and write
 - B. Platform-dependent
 - C. Close to human language
 - D. Requires a compiler or interpreter
9. Which programming language is considered the oldest high-level programming language still in use today?
 - A. Java
 - B. COBOL
 - C. Python
 - D. Ruby
10. Who is known as the father of the C programming language?
 - A. Dennis Ritchie
 - B. Linus Torvalds
 - C. Bill Gates
 - D. Larry Page
11. What is the primary function of an algorithm in computing?
 - A. To store files permanently
 - B. To provide graphics for user interfaces
 - C. To define a step-by-step procedure for solving a problem
 - D. To display network speed
12. Which programming paradigm is associated with languages like Prolog and Lisp?
 - A. Imperative
 - B. Declarative
 - C. Object-Oriented
 - D. Functional
13. What is the purpose of a compiler in programming?
 - A. Translate source code to machine code
 - B. Debug code
 - C. Manage memory
 - D. Design user interfaces

14. Which of the following is NOT a commonly used database management system?
 - A. MySQL
 - B. Oracle
 - C. Photoshop
 - D. PostgreSQL
15. Who is the creator of the Ruby programming language?
 - A. Yukihiro Matsumoto
 - B. Guido van Rossum
 - C. Anders Hejlsberg
 - D. Ryan Dahl
16. Which programming language is known for its use in statistical computing and graphics?
 - A. R
 - B. PHP
 - C. Swift
 - D. Kotlin
17. Which color model is used primarily for digital screens?
 - A. CMYK
 - B. RGB
 - C. HSV
 - D. Greyscale
18. Which of the following is used by 3D printers?
 - A. Paper and ink
 - B. Thermal ribbons
 - C. Filament materials like PLA
 - D. Carbon paper
19. Who developed the first high-level programming language, "FORTRAN"?
 - A. John Backus
 - B. Grace Hopper
 - C. Alan Turing
 - D. Ada Lovelace
20. What is the purpose of the "else" statement in programming?
 - A. Define a function
 - B. Loop through a block of code
 - C. Handle multiple conditions
 - D. Print text to the console

21. What characterized first-generation computers?
 - A. Use of transistors
 - B. Use of integrated circuits
 - C. Use of vacuum tubes
 - D. Wireless networking
22. Which of the following is NOT a characteristic of dynamic programming languages?
 - A. Require explicit declaration of data types
 - B. Offer flexibility in coding
 - C. Perform type checking at runtime
 - D. Allow variables to change data types
23. Which language introduced the concept of 'classes' to support object-oriented programming?
 - A. C
 - B. Simula
 - C. Python
 - D. Java
24. In software development, what does the acronym 'IDE' stand for?
 - A. Integrated Development Environment
 - B. Internal Database Engine
 - C. Independent Deployment Entity
 - D. Intuitive Design Experience
25. The concept of 'Generics' in programming languages like Java and C# is used to:
 - A. Specify exact data types in collections
 - B. Increase runtime processing speed
 - C. Encrypt data types
 - D. Dynamically allocate memory
26. The evolution of HTTP/2 from HTTP/1.1 represents what kind of technological progress?
 - A. Decrease in data encryption standards
 - B. Reduction in web page load times
 - C. Increase in the size of request headers
 - D. Decrease in parallel connections
27. What principle of software development emphasizes writing clean, understandable, and maintainable code?
 - A. Agile Development
 - B. Waterfall Methodology
 - C. Test-Driven Development
 - D. Refactoring

28. In the context of version control systems, what does 'commit' refer to?
- A. Sending changes to a remote server
 - B. Reverting to a previous version of code
 - C. Saving changes in the local repository
 - D. Deleting a branch
29. Which type of server is responsible for managing email delivery?
- A. FTP Server
 - B. DNS Server
 - C. SMTP Server
 - D. Email Server
30. Which programming language was developed by Microsoft in the early 2000s?
- A. Python
 - B. C#
 - C. Java
 - D. Ruby
31. Which programming language was created by Guido van Rossum in the late 1980s?
- A. Python
 - B. Ruby
 - C. C++
 - D. JavaScript
32. Which programming language is primarily used for developing IOS mobile applications?
- A. C
 - B. Swift
 - C. Java
 - D. PHP
33. Which programming language is known for its use in artificial intelligence applications?
- A. Java
 - B. Python
 - C. C++
 - D. Ruby
34. What is the role of a database management system (DBMS) in information technology?
- A. Manage and organize data
 - B. Design websites
 - C. Connect to social media platforms
 - D. Secure email communication

35. What was the first high-level programming language designed to be easy to read and write?
- A. COBOL
 - B. Python
 - C. C
 - D. Java
36. Which programming language is commonly used for web development and scripting?
- A. Ruby
 - B. Swift
 - C. JavaScript
 - D. C#
37. What is the purpose of version control systems like Git in programming?
- A. Track changes in code
 - B. Write complex algorithms
 - C. Test user interfaces
 - D. Design databases
38. Which programming language uses a JIT (Just-In-Time) compiler for faster performance?
- A. Python
 - B. Java
 - C. C++
 - D. Ruby
39. Which protocol is responsible for web traffic?
- A. FTP
 - B. HTTP
 - C. SMTP
 - D. SSH
40. Which protocol uses port 22 by default?
- A. FTP
 - B. SMTP
 - C. SSH
 - D. DNS
41. Tom needs to connect several peripheral devices to his laptop but has limited USB ports. What device can he use to expand the number of USB connections?
- A. USB splitter
 - B. USB hub
 - C. USB extender
 - D. USB converter

42. Which of the following best describes the main advantage of microservices architecture over monolithic architecture?
- A. Easier to scale
 - B. Less complex to develop
 - C. Requires fewer resources
 - D. Faster execution time
43. Which of the following best describes the role of an operating system in a computer?
- A. It provides physical connectivity between hardware components
 - B. It manages hardware resources and provides a platform for software applications to run
 - C. It converts high-level programming languages into machine code
 - D. It protects the computer from malware and viruses
44. Which data structure is optimal for implementing a browser's back button functionality?
- A. Queue
 - B. Stack
 - C. Array
 - D. Hash Table
45. What mechanism do modern garbage-collected languages use to manage memory?
- A. Reference counting
 - B. Manual allocation and deallocation
 - C. Static memory allocation
 - D. Direct memory access
46. Which of the following is an example of an input device?
- A. Monitor
 - B. Keyboard
 - C. Speaker
 - D. Printer
47. What is the fundamental difference between SQL and NoSQL databases?
- A. SQL databases are faster
 - B. NoSQL databases do not allow complex queries
 - C. SQL databases are primarily relational
 - D. SQL databases are newer technologies
48. Which concept is fundamental to understanding the Git version control system?
- A. Polymorphism
 - B. Branching
 - C. Recursion
 - D. Serialization

49. What was a significant contribution of Alan Turing to the field of computer science?
- A. The concept of a Turing machine
 - B. The development of the Python language
 - C. The invention of the transistor
 - D. The creation of the World Wide Web
50. Robert is setting up a local area network (LAN) for his office. Which network topology is most commonly used due to its simplicity and scalability?
- A. Ring topology
 - B. Star topology
 - C. Bus topology
 - D. Mesh topology