

Contestant Number: _____

Time: _____

Rank: _____



Information Technology Concepts (391)

STATE 2025

CONCEPT KNOWLEDGE:

Multiple Choice (50 @ 2 points each)

_____ (100 points)

Test Time: 60 minutes

Multiple Choice Questions

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

1. A basic network concept is that a firewall:
 - A. Slows down the network
 - B. Is used exclusively for wireless networks
 - C. Protects a network by controlling incoming and outgoing traffic
 - D. Increases data transmission rates
2. A firewall is configured to block or allow traffic based on:
 - A. The type of application used
 - B. The color of the data packet
 - C. Rules pertaining to ports and protocols
 - D. The speed of the data transfer
3. A network that covers a large geographic area, such as a city or country, is known as:
 - A. LAN
 - B. WAN
 - C. MAN
 - D. PAN
4. A VPN is used to:
 - A. Increase Internet speed
 - B. Monitor user activity
 - C. Securely connect to a network over the Internet
 - D. Display advertisements
5. In programming, what does the acronym "IDE" stand for?
 - A. Integrated Development Environment
 - B. Interactive Design Environment
 - C. Internet Development Engine
 - D. Interface Design Extension
6. An ergonomic chair supports which of the following principles?
 - A. Encouraging frequent stretching
 - B. Allowing for various sitting postures
 - C. Requiring fixed armrest positions
 - D. Promoting sitting in one position

7. In programming, what is the purpose of a 'constructor' in a class?
 - A. To create a new instance of the class
 - B. To destroy an instance of the class
 - C. To declare class variables
 - D. To initialize a database connection
8. Data encryption on the internet is most commonly implemented with:
 - A. HTTPS
 - B. FTPS
 - C. SFTP
 - D. SMTP
9. DNS resolution is primarily associated with which port number?
 - A. 53
 - B. 80
 - C. 110
 - D. 443
10. Environmental concerns in IT include all EXCEPT:
 - A. Lowering energy usage
 - B. Increasing e-waste recycling
 - C. Using more paper to reduce digital storage
 - D. Reducing carbon footprint
11. For graphics work, which color model is typically used in digital design?
 - A. CMYK
 - B. RGB
 - C. HSV
 - D. LAB
12. 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
13. In green computing, one major goal is to:
 - A. Increase the use of non-renewable energy
 - B. Reduce electronic waste
 - C. Enhance the manufacturing of larger devices
 - D. Decrease the lifespan of devices

14. In networking, NAT is used for:
- A. Speeding up the network
 - B. Translating between public and private IP addresses
 - C. Encrypting data
 - D. Filtering content
15. In object-oriented programming, what does the 'S' in SOLID principles stand for?
- A. Single responsibility
 - B. Synchronous processing
 - C. Static typing
 - D. System encapsulation
16. In terms of security, why is port scanning considered a potential threat?
- A. It can slow down the network
 - B. It directly damages hardware
 - C. It reveals open ports that could be exploited
 - D. It encrypts data traffic
17. In the context of databases, what does CRUD stand for?
- A. Create, Read, Update, Delete
 - B. Copy, Read, Update, Deploy
 - C. Compile, Run, Update, Debug
 - D. Calculate, Record, Use, Design
18. In the context of operating systems, what does "multitasking" refer to?
- A. Running multiple applications on different devices simultaneously
 - B. Running multiple applications on a single device simultaneously
 - C. Completing tasks manually without the help of computers
 - D. Using multiple monitors with a single computer
19. In the context of programming languages, what is 'garbage collection'?
- A. A tool to clean up unused code
 - B. A feature to manage memory allocation
 - C. A process to collect user data
 - D. A method to optimize CPU usage
20. In which decade was the first high-level programming language developed?
- A. 1950s
 - B. 1960s
 - C. 1970s
 - D. 1980s

21. In which programming language was the concept of object-oriented programming first introduced?
- A. C
 - B. Pascal
 - C. Smalltalk
 - D. Fortran
22. Network Address Translation (NAT) is mainly used on which type of device?
- A. Switch
 - B. Router
 - C. Firewall
 - D. Access Point
23. Phishing attacks typically involve:
- A. Installing antivirus software
 - B. The physical theft of a computer
 - C. Sending legitimate-looking emails to steal personal information
 - D. Creating secure websites
24. Proper ergonomic practices for keyboard use include:
- A. Flat placement on the desk
 - B. A slight negative tilt
 - C. High placement near the monitor
 - D. Using only the fingertips to type
25. Social engineering attacks exploit:
- A. Software vulnerabilities
 - B. Hardware malfunctions
 - C. The human element of security systems
 - D. Internet connectivity issues
26. The development of responsive web design techniques was primarily a response to:
- A. The rise of mobile internet usage
 - B. The increase in broadband speeds
 - C. The demand for more interactive web pages
 - D. The need for better web security
27. The evolution from assembly language to high-level programming languages primarily aimed to make programming:
- A. More efficient in execution
 - B. More accessible and understandable
 - C. More focused on low-level hardware operations
 - D. Less dependent on the operating system

28. The main difference between a worm and a virus is that a worm:
- A. Requires user interaction to spread
 - B. Does not need to attach itself to an existing program
 - C. Improves computer performance
 - D. Is not malicious
29. The main environmental concern with cloud computing is:
- A. The amount of paper used
 - B. The physical space occupied by users
 - C. The energy consumption of data centers
 - D. The use of desktop computers
30. The main function of a router in a network is to:
- A. Store files
 - B. Forward data packets between networks
 - C. Provide wireless connectivity
 - D. Block malware
31. The practice of following ethical guidelines in computing includes all EXCEPT:
- A. Respecting copyright laws
 - B. Ignoring privacy concerns
 - C. Acknowledging the source of information
 - D. Ensuring accessibility for all users
32. The protocol used for secure file transfer over SSL/TLS is known as:
- A. FTP
 - B. SFTP
 - C. FTPS
 - D. HTTP
33. The purpose of subnetting in a network is to:
- A. Increase the Internet speed
 - B. Create smaller, manageable network segments
 - C. Decrease security
 - D. Increase the number of IP addresses available
34. The Secure Shell (SSH) protocol is commonly used for:
- A. Secure file transfers
 - B. Secure remote machine access
 - C. Encrypting web traffic
 - D. Sending emails securely

35. The term 'DevOps' combines what two aspects of software development?
- A. Development and Operations
 - B. Documentation and Optimization
 - C. Design and Ownership
 - D. Debugging and Optimization
36. The transition from procedural programming to object-oriented programming emphasizes:
- A. The functions performed by the code
 - B. The compilation speed
 - C. The memory usage of the application
 - D. The objects the code manipulates
37. The use of what algorithm is central to the operation of cryptocurrencies like Bitcoin?
- A. RSA encryption
 - B. Blockchain
 - C. Quick sort
 - D. Linear search
38. To demonstrate a basic understanding of network concepts, you should know that IP address stands for:
- A. Internet Protocol address
 - B. Internal Protocol address
 - C. International Privacy address
 - D. Intelligent Performance address
39. What component is essential for 3D graphics rendering in games and applications?
- A. Sound Card
 - B. Network Card
 - C. GPU
 - D. CPU
40. What does RAID stand for in data storage?
- A. Redundant Array of Independent Disks
 - B. Random Access Integrated Drive
 - C. Remote Access and Intrusion Detection
 - D. Rapid Application of Information Data
41. The default port for the Remote Desktop Protocol (RDP) is:
- A. 3389
 - B. 22
 - C. 443
 - D. 80

42. What data structure is optimized for scenarios where insertion and deletion operations are frequent?
- A. Array
 - B. LinkedList
 - C. Stack
 - D. Queue
43. What is the function of a DNS server?
- A. Translates domain names to IP addresses
 - B. Encrypts data transmission
 - C. Manages email communication
 - D. Provides network security
44. What does the term 'API' stand for, and what is its primary purpose?
- A. Automated Programming Interface, to speed up software development
 - B. Advanced Peripheral Interface, to enhance hardware compatibility
 - C. Application Programming Interface, to allow different software systems to communicate
 - D. Abstract Programming Interface, to provide a layer of abstraction in programming
45. What does the term 'Big O notation' represent in algorithm analysis?
- A. Memory usage efficiency
 - B. Processor speed
 - C. Execution time complexity
 - D. The number of inputs
46. What is an example of a biometric security measure?
- A. Password
 - B. Firewall
 - C. Fingerprint scanner
 - D. Antivirus software
47. What is the main advantage of an SSD over a traditional HDD?
- A. Larger storage capacity
 - B. Better color accuracy
 - C. Faster data access
 - D. More durable
48. What is the main advantage of using version control systems like Git in software development?
- A. Secure data storage
 - B. Collaborative coding
 - C. Improved code performance
 - D. Graphic design tools

49. What is the primary function of RAM in a computer?
- A. Store data permanently
 - B. Provide fast temporary storage for the CPU
 - C. Improve graphics processing
 - D. Power the computer
50. What was the first widely used programming language designed for relational database management systems?
- A. SQL
 - B. Python
 - C. COBOL
 - D. Java