

Member ID: _____

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Information Technology Concepts (391)

NATIONAL 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 principle of security and ethics in computing is to:
 - A. Share passwords with trusted colleagues
 - B. Ensure data accuracy and integrity
 - C. Access only public information
 - D. Use others' work without citation
2. An ergonomic practice for preventing eye strain includes:
 - A. Looking at a digital screen for continuous hours
 - B. Using a smaller font size
 - C. Taking regular breaks to look away from the screen
 - D. Increasing screen brightness
3. An example of an environmentally friendly practice in IT is:
 - A. Increased paper usage
 - B. Lowering screen brightness
 - C. High energy consumption
 - D. Use of non-recyclable materials
4. Consider this early C code for swapping two variables: `int temp = x; x = y; y = temp;`. Modern languages like Python allow a more succinct approach: `x, y = y, x`. This evolution exemplifies a shift towards what?
 - A. Increased verbosity
 - B. Lower-level programming
 - C. Higher-level abstraction
 - D. More complex syntax
5. Encryption is important for data security because it:
 - A. Makes the data heavier
 - B. Translates data into a different language
 - C. Scrambles data to make it unreadable without the correct key
 - D. Slows down the computer
6. For securing web traffic, HTTPS uses which port by default?
 - A. 80
 - B. 443
 - C. 8080
 - D. 23

7. How do functional programming languages like Haskell handle side effects?
 - A. Through exceptions
 - B. Using loops
 - C. With monads
 - D. By modifying variables
8. How has the introduction of asynchronous programming in languages like JavaScript changed web development?
 - A. Made web pages static
 - B. Reduced client-server communication
 - C. Enabled non-blocking operations
 - D. Increased reliance on multi-threading
9. In networking, what does DHCP stand for?
 - A. Dynamic Host Control Protocol
 - B. Dynamic Hyper Configuration Protocol
 - C. Dynamic Host Configuration Protocol
 - D. Direct HTTP Connect Protocol
10. Proper office lighting should:
 - A. Be directed towards the computer screen
 - B. Create glare on the monitor
 - C. Be sufficient to read printed documents without straining
 - D. Be as dim as possible
11. The concept of "digital minimalism" contributes to environmental sustainability by:
 - A. Encouraging the use of more digital devices
 - B. Reducing the digital footprint and energy consumption
 - C. Increasing online data storage use
 - D. Promoting constant connectivity
12. The concept of "green computing" refers to:
 - A. Making computers out of biodegradable materials
 - B. Using computers for environmental research
 - C. Reducing the environmental impact of computing
 - D. Designing faster microprocessors
13. The environmental impact of data centers can be mitigated by:
 - A. Increasing data processing speeds
 - B. Reducing cooling requirements
 - C. Expanding physical size
 - D. Using more servers

14. The introduction of Lambda expressions in Java 8 is an example of Java evolving to include features from what programming paradigm?
 - A. Procedural
 - B. Functional
 - C. Object-Oriented
 - D. Imperative
15. The introduction of what feature in ECMAScript 6 (ES6) has significantly improved JavaScript's ability to handle asynchronous operations?
 - A. Callbacks
 - B. Promises
 - C. Threads
 - D. Events
16. The most ergonomic position for a computer monitor is:
 - A. Just below eye level
 - B. At eye level
 - C. Above eye level
 - D. To the side of the user
17. The practice of social engineering in cybersecurity exploits:
 - A. Technical vulnerabilities
 - B. Encryption algorithms
 - C. Software bugs
 - D. Human psychology
18. The practice of using dual monitors can improve productivity but violates which ergonomic principle?
 - A. Keeping frequently used items within arm's reach
 - B. Reducing clutter on the desk
 - C. Minimizing head and neck movement
 - D. Ensuring that the work surface is stable
19. The primary environmental concern with expanding digital storage is:
 - A. The size of storage devices
 - B. The color of storage devices
 - C. Energy consumption and cooling needs
 - D. The weight of storage devices
20. The Trivial File Transfer Protocol (TFTP), used for simple file transfers, typically uses which port?
 - A. 69
 - B. 21
 - C. 22
 - D. 25

21. What does SSL stand for in network security?
 - A. Secure Socket Layer
 - B. Solid State Logic
 - C. Simple Security Layer
 - D. Server Side Language
22. What does the principle of least privilege in security mean?
 - A. Giving users the least amount of training needed
 - B. Providing users only the permissions they need to perform their tasks
 - C. Ensuring that all users have admin access
 - D. Making all files read-only
23. What feature of modern programming languages, such as Python's asyncio, facilitates concurrent programming?
 - A. Synchronous execution
 - B. Callbacks
 - C. Promises
 - D. Asynchronous I/O
24. What is the main environmental concern with cryptocurrency mining?
 - A. The noise it produces
 - B. Its use of blockchain technology
 - C. The high energy consumption
 - D. The internet bandwidth used
25. What is the main function of an operating system?
 - A. Manage software resources
 - B. Connect to the Internet
 - C. Protect against viruses
 - D. Enhance graphics
26. What is the primary difference between procedural programming and object-oriented programming?
 - A. Procedural focuses on functions, OOP focuses on objects
 - B. Procedural is older than OOP
 - C. OOP uses fewer lines of code
 - D. Procedural is faster than OOP
27. What is the primary purpose of operating system updates?
 - A. To change the interface design
 - B. To add unnecessary features
 - C. To fix bugs and improve security
 - D. To slow down the computer

28. 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
29. What is the purpose of a firewall in network security?
- A. Filters network traffic
 - B. Monitors CPU performance
 - C. Encrypts data at rest
 - D. Manages website content
30. What is the purpose of a VPN (Virtual Private Network)?
- A. Securely connect to a private network
 - B. Increase internet speed
 - C. Block unwanted emails
 - D. Store data in the cloud
31. What is the purpose of the "if...else" statement in programming?
- A. Loop through a block of code
 - B. Define a function
 - C. Make decisions based on conditions
 - D. Print text to the console
32. 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
33. What principle is demonstrated by encapsulating data and operations on that data within a single unit, as seen in many modern programming languages?
- A. Polymorphism
 - B. Encapsulation
 - C. Abstraction
 - D. Inheritance
34. What type of programming language is Python classified as?
- A. Procedural
 - B. Declarative
 - C. Object-Oriented
 - D. Functional

35. What was a significant driver for the development of high-level programming languages like Python and Ruby?
- A. The need for direct hardware control
 - B. The desire for more efficient compilation
 - C. The demand for easier-to-read and write code
 - D. The focus on developing operating systems
36. Which command in Linux shows the current directory's contents?
- A. ls
 - B. dir
 - C. show
 - D. list
37. Which data type is used to store whole numbers in Python?
- A. float
 - B. str
 - C. int
 - D. bool
38. Which ergonomics practice helps in reducing the risk of Carpal Tunnel Syndrome?
- A. Keeping wrists in a flexed position
 - B. Using a wrist rest while typing
 - C. Hovering hands over the keyboard
 - D. Typing with minimal force
39. Which file system is primarily used in Windows operating systems?
- A. NTFS
 - B. EXT4
 - C. HFS+
 - D. FAT32
40. Which graphics concept is described by the number of pixels per inch in an image?
- A. Color Depth
 - B. Aspect Ratio
 - C. Resolution
 - D. Brightness
41. Which language is primarily used for database management and operations?
- A. C++
 - B. JavaScript
 - C. SQL
 - D. Python

42. Which network device is used to connect multiple devices within a local area network and direct data frames?
- A. Modem
 - B. Switch
 - C. Router
 - D. Firewall
43. Which of the following best describes the function of a printer's duplexing feature?
- A. Prints in multiple colors
 - B. Allows scanning
 - C. Prints on both sides of the paper automatically
 - D. Enhances print quality
44. Which of the following file formats is commonly used for lossless image compression?
- A. JPEG
 - B. GIF
 - C. PNG
 - D. BMP
45. Which of the following is a benefit of using functions in programming?
- A. Increase code complexity
 - B. Reduce code repetition
 - C. Slow down program execution
 - D. Limit code readability
46. Which of the following is an example of an input device?
- A. Monitor
 - B. Keyboard
 - C. Speaker
 - D. Printer
47. Which of the following protocols is used for email transmission?
- A. HTTP
 - B. SMTP
 - C. FTP
 - D. SNMP
48. Which protocol is used to securely access a remote computer?
- A. HTTP
 - B. SMTP
 - C. FTP
 - D. SSH

49. Which technology is used to identify and authenticate individuals based on physical characteristics such as fingerprints or iris scans?
- A. RFID
 - B. VPN
 - C. Biometrics
 - D. Blockchain
50. Which type of cyber-attack involves tricking individuals into providing sensitive information such as passwords or credit card details?
- A. Phishing
 - B. DDoS
 - C. Malware
 - D. Ransomware