

Introduction to Computer Science

1. What is the primary strategy of learning introduced in CS101?

- A) Depth First Learning
- B) Random Learning
- C) Breadth First Learning
- D) Sequential Learning
- Answer: C

2. Which module covers the basic introduction to almost all courses of Computer Science?

- A) Module 1
- B) Module 2
- C) Module 3
- D) Module 4
- Answer: B

Search Engines

3. Which symbol can be used on Google to search within a particular social media platform?

- A) #
- B) @
- C) \$
- D) &
- Answer: B

4. How do you search for a specific price on Google?

- A) Put \$ before the number
- B) Put € before the number

- C) Put pkr before the number
- D) Put £ before the number
- **Answer:** C

5. Which operator would you use to search for an exact match phrase on Google?

- A) Single quotes (' ')
- B) Double quotes (" ")
- C) Parentheses ()
- D) Square brackets []
- **Answer:** B

Searching Tricks

6. Which command can you use to perform calculations directly on Google?

- A) calc:
- B) calculator:
- C) math:
- D) calc=
- **Answer:** A

7. What can be used to search the weather of a particular location on Google?

- A) weather:
- B) climate:
- C) temperature:
- D) forecast:
- **Answer:** A

Search Operators

8. How do you exclude words from a query on Google?

- A) Use the minus sign (-)
- B) Use the exclamation mark (!)
- C) Use the underscore (_)
- D) Use the tilde (~)
- **Answer:** A

9. Which operator allows you to search within a specific range of numbers on Google?

- A) ..
- B) //
- C) --
- D) ::
- **Answer:** A

10. How do you search for web pages where the search term appears in the title?

- A) intitle:
- B) intitle=
- C) inurl:
- D) intext:
- **Answer:** A

11. Which operator is used to find pages that contain all search terms anywhere in the text of the page?

- A) intitle:
- B) allintext:
- C) inurl:
- D) allintitle:
- **Answer:** B

Roots of Computing

12. Which ancient device is considered one of the earliest computing devices?

- A) Abacus
- B) Slide Rule
- C) Difference Engine
- D) Analytical Engine
- Answer: A

13. The abacus was primarily used in which ancient civilization?

- A) Egyptian
- B) Chinese
- C) Roman
- D) Greek
- Answer: B

Boolean Operations

14. Which Boolean operation results in true only when both operands are true?

- A) OR
- B) AND
- C) NOT
- D) XOR
- Answer: B

15. Which Boolean operation inverts the value of its operand?

- A) OR
- B) AND
- C) NOT
- D) XOR
- Answer: C

Hexadecimal Notation

16. What is the hexadecimal equivalent of the binary number 1010?

- A) A
- B) B
- C) C
- D) D
- Answer: A

17. In hexadecimal notation, what does the digit 'F' represent in decimal?

- A) 12
- B) 13
- C) 14
- D) 15
- Answer: D

Data Storage

18. Which type of data storage uses magnetic disks?

- A) SSD
- B) HDD
- C) RAM
- D) ROM
- Answer: B

19. What is the primary advantage of optical storage over magnetic storage?

- A) Higher speed
- B) Higher capacity
- C) Durability
- D) Cost
- Answer: C

20. Flash drives are an example of which type of storage?

- A) Magnetic
- B) Optical
- C) Solid State
- D) Volatile
- Answer: C

Representing Text and Numbers

21. Which encoding scheme is widely used to represent text in computers?

- A) ASCII
- B) Unicode
- C) EBCDIC
- D) UTF-16
- Answer: A

22. What is the binary representation of the decimal number 5?

- A) 101
- B) 110
- C) 111
- D) 100
- Answer: A

Representing Images and Sound

23. Which format is commonly used for digital images?

- A) MP3
- B) JPEG
- C) WAV

- D) TXT
- Answer: B

24. What is the standard format for audio files?

- A) MP3
- B) JPEG
- C) BMP
- D) PNG
- Answer: A

Networking and the Internet

25. What is the main protocol used for transferring web pages on the internet?

- A) FTP
- B) HTTP
- C) SMTP
- D) SSH
- Answer: B

26. Which protocol is used to send emails?

- A) FTP
- B) HTTP
- C) SMTP
- D) SSH
- Answer: C

Algorithms

27. What is an algorithm?

- A) A programming language

- B) A set of instructions to solve a problem
- C) A type of computer hardware
- D) A form of data storage
- Answer: B

28. Which of the following is an example of a sorting algorithm?

- A) Binary Search
- B) Quick Sort
- C) Depth First Search
- D) Breadth First Search
- Answer: B

Programming Languages

29. Which programming language is introduced in the CS101 course?

- A) Java
- B) Python
- C) C++
- D) JavaScript
- Answer: C

30. What is the output of the following C++ code: `\`cout << "Hello World";\`?`

- A) Hello World
- B) Hello
- C) World
- D) Syntax Error
- Answer: A

Software Engineering

31. What is the first phase in software development?

- A) Implementation
- B) Design
- C) Testing
- D) Requirement Gathering
- Answer: D

32. In which phase is the software actually coded?

- A) Design
- B) Implementation
- C) Testing
- D) Maintenance
- Answer: B

Data Abstraction

33. What is data abstraction?

- A) Hiding the details of how data is stored
- B) Directly accessing the hardware
- C) Writing complex code
- D) Simplifying user interfaces
- Answer: A

34. Which data structure operates on a First In, First Out (FIFO) basis?

- A) Stack
- B) Queue
- C) Tree
- D) Graph
- Answer: B

Database Systems

35. What does DBMS stand for?

- A) Data Basic Management System
- B) Database Management System
- C) Data Binary Management System
- D) Data Building Management System
- **Answer:** B

36. Which language is primarily used to interact with a database?

- A) HTML
- B) SQL
- C) CSS
- D) JavaScript
- **Answer:** B

Artificial Intelligence

37. What is the goal of Artificial Intelligence (AI)?

- A) To build faster computers
- B) To develop systems that can perform tasks intelligently
- C) To increase internet speed
- D) To manage databases efficiently
- **Answer:** B

38. Which of the following is an example of AI?

- A) Web Browsers
- B) Email Clients
- C) Self

-driving Cars

- D) Word Processors

- Answer: C

Cyber Security

39. What is a common method used to protect data from unauthorized access?

- A) Encryption

- B) Decryption

- C) Compression

- D) Defragmentation

- Answer: A

40. Which of the following is a type of malware?

- A) Firewall

- B) Antivirus

- C) Trojan Horse

- D) VPN

- Answer: C

Operating Systems

41. What is the primary function of an operating system?

- A) To compile programs

- B) To manage hardware and software resources

- C) To browse the internet

- D) To edit documents

- Answer: B

42. Which operating system is known for its open-source nature?

- A) Windows
- B) macOS
- C) Linux
- D) iOS
- Answer: C

Computer Architecture

43. What is the main component of a computer that performs calculations and executes instructions?

- A) RAM
- B) Hard Disk
- C) CPU
- D) Motherboard
- Answer: C

44. Which type of memory is volatile and loses its contents when power is turned off?

- A) RAM
- B) ROM
- C) Hard Disk
- D) SSD
- Answer: A

Human-Computer Interaction

45. What is the focus of Human-Computer Interaction (HCI)?

- A) Improving hardware efficiency
- B) Enhancing user experience
- C) Developing faster processors
- D) Designing network protocols
- Answer: B

46. Which device is primarily used for direct input in HCI?

- A) Monitor
- B) Keyboard
- C) Printer
- D) Scanner
- Answer: B

Software Development Methodologies

47. Which software development methodology focuses on iterative development and collaboration?

- A) Waterfall
- B) Agile
- C) Spiral
- D) V-Model
- Answer: B

48. In the Waterfall model, which phase comes directly after the design phase?

- A) Implementation
- B) Testing
- C) Maintenance
- D) Requirement Gathering
- Answer: A

Data Mining

49. What is data mining?

- A) The process of cleaning data
- B) The process of discovering patterns in large data sets
- C) The process of storing data

- D) The process of encrypting data

- Answer: B

50. Which of the following is a common data mining technique?

- A) Classification

- B) Compilation

- C) Decryption

- D) Compression

- Answer: A

Module 50: Operating Systems: Components (II)

1. Which component of the operating system manages hardware resources?

- A) Kernel

- B) Shell

- C) User Interface

- D) File System

- Answer: A

2. What is the primary function of device drivers in an operating system?

- A) Manage system memory

- B) Control hardware devices

- C) Handle user commands

- D) Manage files

- Answer: B

Module 51: Operating Systems: Process of Booting

3. What is the process called when the operating system is loaded into memory?

- A) Paging
- B) Booting
- C) Swapping
- D) Formatting
- **Answer:** B

4. Where is the initial program executed by the CPU stored?

- A) Hard Drive
- B) RAM
- C) ROM
- D) Cache
- **Answer:** C

Module 52: Operating Systems: Process and its Administration

5. What term describes a program in execution within an operating system?

- A) Thread
- B) Task
- C) Process
- D) Job
- **Answer:** C

6. Which component of the operating system schedules processes for execution?

- A) Dispatcher
- B) Scheduler
- C) Kernel
- D) Shell
- **Answer:** B

Module 53: Operating Systems: Process and its Administration

7. What is a context switch in an operating system?

- A) Changing from user mode to kernel mode
- B) Saving the state of one process and loading the state of another
- C) Allocating memory to processes
- D) Switching between different users
- Answer: B

8. Which state is NOT a valid state in the lifecycle of a process?

- A) Ready
- B) Blocked
- C) Running
- D) Terminating
- Answer: D

Module 54: Operating Systems: Handling Competition between Processes

9. What is the main problem addressed by process synchronization?

- A) Memory allocation
- B) Process scheduling
- C) Data inconsistency
- D) Deadlock prevention
- Answer: C

10. Which mechanism ensures that only one process at a time can access a critical section?

- A) Semaphore
- B) Thread
- C) Fork
- D) Pipe
- Answer: A

Module 55: Operating Systems: Semaphores

11. What is a semaphore in the context of operating systems?

- A) A type of process
- B) A synchronization tool
- C) A memory manager
- D) A type of file system
- Answer: B

12. Who introduced the concept of semaphores?

- A) Alan Turing
- B) Edsger Dijkstra
- C) John von Neumann
- D) Ken Thompson
- Answer: B

Module 56: Operating Systems: Deadlock

13. Which of the following is NOT a necessary condition for a deadlock to occur?

- A) Mutual Exclusion
- B) Hold and Wait
- C) Preemption
- D) Circular Wait
- Answer: C

14. What strategy can be used to handle deadlocks?

- A) Avoidance
- B) Detection
- C) Prevention

- D) All of the above

- Answer: D

Module 57: Operating Systems: Security Attacks from outside

15. Which type of attack involves overwhelming a system with excessive requests?

- A) Phishing

- B) Denial of Service (DoS)

- C) Man-in-the-Middle

- D) Spoofing

- Answer: B

16. What is the primary goal of a firewall in a network?

- A) Prevent data corruption

- B) Monitor internal processes

- C) Control incoming and outgoing network traffic

- D) Manage user passwords

- Answer: C

Module 58: Operating Systems: Security Attacks from inside

17. What is an example of an insider threat?

- A) Virus attack

- B) Unauthorized access by an employee

- C) Phishing scam

- D) External hacking attempt

- Answer: B

18. Which method can help mitigate insider threats?

- A) Firewalls

- B) Antivirus software
- C) Strong access control policies
- D) Spam filters
- **Answer:** C

Module 59: Networking and the Internet: Network Classification

19. What is a LAN?

- A) Large Area Network
- B) Local Area Network
- C) Long Area Network
- D) Low Area Network
- **Answer:** B

20. Which network type spans cities, countries, or continents?

- A) PAN
- B) LAN
- C) MAN
- D) WAN
- **Answer:** D

Module 60: Networking and the Internet: Protocols

21. What does TCP stand for?

- A) Transmission Control Protocol
- B) Transfer Communication Protocol
- C) Technical Communication Protocol
- D) Transport Control Protocol
- **Answer:** A

22. Which protocol is used for sending emails?

- A) HTTP
- B) FTP
- C) SMTP
- D) DNS
- Answer: C

Module 61: Networking and the Internet: Combining Networks

23. What is the primary purpose of a router?

- A) To connect multiple devices within a network
- B) To route data between different networks
- C) To provide security to a network
- D) To store data
- Answer: B

24. What does a gateway do in a network?

- A) Connects networks using different protocols
- B) Filters network traffic
- C) Manages network security
- D) Monitors network performance
- Answer: A

Module 62: Networking and the Internet: Methods of Process Communication

25. Which IPC mechanism is most commonly used for simple message passing?

- A) Semaphores
- B) Sockets
- C) Pipes
- D) Shared Memory

- Answer: C

26. What is the key characteristic of shared memory IPC?

- A) Fast data exchange
- B) High security
- C) Easy implementation
- D) Large data capacity

- Answer: A

Module 63: Networking and the Internet: Distributed Systems

27. What is a distributed system?

- A) A single computer that performs all tasks
- B) A collection of independent computers that appears to the users as a single coherent system
- C) A system that uses a single protocol for communication
- D) A system that only operates within a local network

- Answer: B

28. Which is NOT a benefit of distributed systems?

- A) Scalability
- B) Fault tolerance
- C) Single point of failure
- D) Resource sharing

- Answer: C

Module 64: Networking and the Internet: Internet Architecture

29. What is the fundamental protocol suite of the Internet?

- A) OSI
- B) TCP/IP

- C) HTTP/HTTPS
- D) SMTP/POP3
- Answer: B

30. Which layer in the TCP/IP model is responsible for end-to-end communication?

- A) Network Layer
- B) Transport Layer
- C) Internet Layer
- D) Application Layer
- Answer: B

Module 65: Networking and the Internet: Internet Addressing

31. What is an IP address?

- A) A unique identifier for a device on a network
- B) A security protocol
- C) A type of network cable
- D) A method of encryption
- Answer: A

32. Which version of IP address is 128-bit?

- A) IPv4
- B) IPv6
- C) IPv5
- D) IPv3
- Answer: B

Module 66: Networking and the Internet: Internet Applications

33. What is VoIP?

- A) Voice over Internet Protocol
- B) Video over Internet Protocol
- C) Virtual over Internet Protocol
- D) Volume over Internet Protocol
- **Answer:** A

34. Which application is NOT an example of VoIP?

- A) Skype
- B) WhatsApp
- C) Microsoft Outlook
- D) Google Hangouts
-

Answer: C

Module 67: Networking and the Internet: Protocol Layers and Services

35. Which layer in the OSI model is responsible for routing?

- A) Data Link Layer
- B) Network Layer
- C) Transport Layer
- D) Session Layer

- **Answer:** B

36. What is the primary function of the Data Link Layer?

- A) Error detection and correction
- B) Routing
- C) End-to-end communication
- D) Encryption

- **Answer:** A

Module 68: Networking and the Internet: Data Link Protocols

37. Which protocol is used for error-free transmission in the Data Link Layer?

- A) TCP
- B) IP
- C) HDLC
- D) HTTP
- Answer: C

38. What is a common method for detecting errors in transmitted data?

- A) Data Encryption
- B) Checksum
- C) Routing
- D) Protocol Stacking
- Answer: B

Module 69: Networking and the Internet: Communication Media

39. Which medium uses light to transmit data?

- A) Coaxial Cable
- B) Twisted Pair
- C) Fiber Optic Cable
- D) Satellite
- Answer: C

40. What is the primary advantage of using fiber optic cables?

- A) Lower cost
- B) Higher bandwidth and speed
- C) Easier installation

- D) Higher flexibility

- Answer: B

Module 70: Networking and the Internet: Modern Internet

41. What is the main characteristic of Web 2.0?

- A) Static content

- B) User-generated content

- C) Limited interactivity

- D) Single-user access

- Answer: B

42. Which technology is fundamental to Web 2.0 applications?

- A) HTML

- B) AJAX

- C) FTP

- D) SMTP

- Answer: B

Module 71: Networking and the Internet: Addressing

43. What does DNS stand for?

- A) Dynamic Name System

- B) Domain Name System

- C) Direct Network System

- D) Data Network System

- Answer: B

44. Which type of DNS record maps domain names to IP addresses?

- A) MX Record

- B) CNAME Record
- C) A Record
- D) TXT Record
- Answer: C

Module 72: Networking and the Internet: Internet Access

45. What is the purpose of an ISP?

- A) To host websites
- B) To provide Internet access to users
- C) To secure the Internet
- D) To manage network protocols
- Answer: B

46. Which of the following is NOT a common type of Internet access technology?

- A) DSL
- B) Dial-up
- C) Wi-Fi
- D) Satellite
- Answer: C

Module 73: Networking and the Internet: Internet Applications (continued)

47. Which protocol is used for secure communication over the Internet?

- A) HTTP
- B) FTP
- C) HTTPS
- D) SNMP
- Answer: C

48. What does FTP stand for?

- A) File Transmission Protocol
- B) File Transfer Protocol
- C) Fast Transfer Protocol
- D) First Transmission Protocol
- Answer: B

Module 74: Networking and the Internet: LAN

What is the main purpose of a switch in a LAN?

- A) To connect different networks
- B) To forward data within the same network
- C) To assign IP addresses
- D) To manage network security

Answer: B

Which topology is most commonly used in modern LANs?

- A) Bus
- B) Star
- C) Ring
- D) Mesh

Answer: B

Module 75: Networking and the Internet: WAN

What is a key characteristic of a WAN?

- A) Limited to a small geographic area
- B) Typically owned by a single organization
- C) Connects LANs over large distances
- D) Uses only wireless connections

Answer: C

Which technology is often used in WANs for high-speed data transmission?

- A) Ethernet

- B) Frame Relay
- C) Wi-Fi
- D) Bluetooth

Answer: B

Module 76: Networking and the Internet: Wireless Networks

Which frequency band is commonly used for Wi-Fi networks?

- A) 2.4 GHz
- B) 5.0 GHz
- C) 2.4 MHz
- D) 5.0 MHz

Answer: A

What does WPA stand for in wireless networking?

- A) Wireless Protected Access
- B) Wi-Fi Protected Access
- C) Wireless Protocol Access
- D) Wi-Fi Protocol Access

Answer: B

Module 77: Networking and the Internet: Bluetooth and Personal Area Networks

What is the typical range of a Bluetooth connection?

- A) 1-10 meters
- B) 10-100 meters
- C) 100-1000 meters
- D) Over 1000 meters

Answer: B

Which of the following is NOT a typical use of Bluetooth technology?

- A) Wireless headphones
- B) Data transfer between mobile devices
- C) High-speed Internet access
- D) Wireless keyboards and mice

Answer: C

Module 78: Networking and the Internet: Network Security

What is a common method of securing a wireless network?

- A) Using static IP addresses
- B) Disabling SSID broadcast
- C) Using WPA or WPA2 encryption
- D) Increasing signal strength

Answer: C

What is the primary purpose of a VPN?

- A) To speed up Internet access
- B) To provide secure remote access to a network
- C) To allocate IP addresses
- D) To filter unwanted traffic

Answer: B

Module 79: Networking and the Internet: Network Services

What is DHCP used for in networking?

- A) To secure network communication
- B) To assign dynamic IP addresses to devices
- C) To route data packets
- D) To encrypt data transmissions

Answer: B

What does DNS resolve?

- A) IP addresses to domain names
- B) Domain names to IP addresses
- C) MAC addresses to IP addresses
- D) IP addresses to MAC addresses

Answer: B

Module 80: Networking and the Internet: Cloud Computing

What is the primary benefit of cloud computing?

- A) High hardware costs
- B) Limited storage capacity

- C) Scalability and flexibility
- D) Complex infrastructure management

Answer: C

Which service model offers software applications over the Internet?

- A) IaaS
- B) PaaS
- C) SaaS
- D) DaaS

Answer: C

Module 81: Networking and the Internet: Cybersecurity

What is the primary goal of cybersecurity?

- A) To prevent hardware failure
- B) To protect systems and data from cyber threats
- C) To manage network protocols
- D) To increase network speed

Answer: B

Which type of attack involves encrypting data and demanding a ransom for the decryption key?

- A) Phishing
- B) Malware
- C) Ransomware
- D) DDoS

Answer: C

Module 82: Networking and the Internet: Ethical Hacking

What is the purpose of ethical hacking?

- A) To steal sensitive information
- B) To identify and fix security vulnerabilities
- C) To disrupt network services
- D) To develop malware

Answer: B

What is a common tool used in ethical hacking to scan for vulnerabilities?

- A) Firewall
- B) Anti-virus software
- C) Network scanner
- D) Email filter

Answer: C

Module 83: Networking and the Internet: IoT (Internet of Things)

What does IoT stand for?

- A) Internet of Technology
- B) Internet of Things
- C) Interface of Technology
- D) Integration of Things

Answer: B

Which of the following is an example of an IoT device?

- A) Desktop computer
- B) Smart thermostat
- C) Laptop
- D) Printer

Answer: B

Module 84: Networking and the Internet: Future Trends

Which technology is expected to greatly impact future networking?

- A) Dial-up Internet
- B) 5G
- C) DSL
- D) Ethernet

Answer: B

What is a major focus of future networking trends?

- A) Decreasing data transmission speeds
- B) Increasing security and privacy
- C) Reducing the number of connected devices

D) Simplifying network protocols

Answer: B

Module 85: Software and Programming Languages: Programming Languages

What type of language is Python considered?

- A) Low-level
- B) Assembly
- C) High-level
- D) Machine

Answer: C

Which programming language is primarily used for web development?

- A) C++
- B) Python
- C) JavaScript
- D) Java

Answer: C

Module 86: Software and Programming Languages: Software Development Life Cycle (SDLC)

What is the first phase of the SDLC?

- A) Design
- B) Testing
- C) Planning
- D) Maintenance

Answer: C

Which SDLC model is known for its flexibility and iterative approach?

- A) Waterfall
- B) V-Model
- C) Spiral
- D) Agile

Answer: D

Module 87: Software and Programming Languages: Programming Concepts

What is an algorithm?

- A) A computer language
- B) A step-by-step procedure for solving a problem
- C) A type of data structure
- D) A software application

Answer: B

What does OOP stand for in programming?

- A) Object-Oriented Programming
- B) Optimal Operational Programming
- C) Organizational Operations Programming
- D) On-line Object Programming

Answer: A

Module 88: Software and Programming Languages: Data Structures

Which data structure uses a LIFO (Last In, First Out) principle?

- A) Queue
- B) Stack
- C) Array
- D) Linked List

Answer: B

What is a binary search tree?

- A) A tree where each node has at most two children
- B) A tree with only one child per node
- C) A tree with multiple levels of nodes
- D) A tree used for linear searches

Answer: A

Module 89: Software and Programming Languages: Operating Systems

Which of the following is an open-source operating system?

- A) Windows
- B) MacOS
- C) Linux
- D) Unix

Answer: C

What is the function of a file system in an operating system?

- A) To manage system resources
- B) To control hardware devices
- C) To organize and manage files
- D) To handle user interfaces

Answer: C

Module 90: Software and Programming Languages: System Software

What is system software?

- A) Software used for specific applications
- B) Software that manages and controls computer hardware
- C) Software used for graphic design
- D) Software for word processing

Answer: B

Which of the following is an example of system software?

- A) Microsoft Word
- B) Adobe Photoshop
- C) Windows OS
- D) Mozilla Firefox

Answer: C

Module 91: Software and Programming Languages: Application Software

What is application software?

- A) Software that runs on a network
- B) Software designed for end-users to perform specific tasks
- C) Software that manages system resources
- D) Software that controls hardware devices

Answer: B

Which of the following is NOT an example of application software?

- A) Web browser
- B) Database management system

C) Operating system

D) Word processor

Answer: C

Umer Maz