

Multiple Choice Questions & Answers

1. Which of the following defines the structure of a database?

- A) Data model
- B) Database schema
- C) SQL query
- D) Database transaction

Answer: A) Data model

2. Which data model organizes data in the form of objects?

- A) Hierarchical model
- B) Network model
- C) Relational model
- D) Object-oriented model

Answer: D) Object-oriented model

3. In a relational database, what is a primary key used for?

- A) Identifying relationships between tables
- B) Ensuring referential integrity
- C) Uniquely identifying each row in a table
- D) Indexing data for faster retrieval

Answer: C) Uniquely identifying each row in a table

4. Which SQL keyword is used to retrieve data from a database?

- A) GET
- B) FETCH
- C) SELECT
- D) RETRIEVE

Answer: C) SELECT

5. Which of the following SQL clauses is used to filter rows returned by a SELECT statement?

- A) GROUP BY
- B) ORDER BY
- C) WHERE
- D) HAVING

Answer: C) WHERE

6. Which SQL command is used to add new rows to a table?

- A) INSERT

- B) ADD
- C) UPDATE
- D) CREATE

Answer: A) INSERT

7. What does the SQL command DROP TABLE do?

- A) Deletes all data from a table
- B) Removes a table definition and all its data
- C) Adds a new table to the database
- D) Modifies the structure of a table

Answer: B) Removes a table definition and all its data

8. What is the purpose of a transaction in database management?

- A) To perform queries on the database
- B) To ensure data integrity and consistency
- C) To create backup copies of the database
- D) To optimize database performance

Answer: B) To ensure data integrity and consistency

9. Which of the following is a property of ACID transactions?

- A) Atomicity, Consistency, Isolation, Dependency
- B) Atomicity, Completeness, Isolation, Durability
- C) Atomicity, Consistency, Isolation, Durability
- D) Atomicity, Consensus, Isolation, Durability

Answer: C) Atomicity, Consistency, Isolation, Durability

10. What is the purpose of the COMMIT statement in SQL?

- A) To save the changes made by a transaction
- B) To undo the changes made by a transaction
- C) To lock the database tables
- D) To begin a transaction

Answer: A) To save the changes made by a transaction

11. In a distributed database system, what does the term "data center" refer to?

- A) A central repository for storing data
- B) A facility that houses servers and networking equipment
- C) A protocol for transferring data between servers

D) A software application for managing databases

Answer: B) A facility that houses servers and networking equipment

12. Which of the following is NOT a benefit of using cloud-based database services?

A) Scalability

B) High upfront costs

C) Reliability

D) Accessibility

Answer: B) High upfront costs

13. Which cloud service provider offers Amazon RDS (Relational Database Service)?

A) Microsoft Azure

B) Google Cloud Platform

C) Amazon Web Services

D) IBM Cloud

Answer: C) Amazon Web Services

14. Which SQL command is used to remove data from a database?

A) DELETE

B) REMOVE

C) ERASE

D) DROP

Answer: A) DELETE

15. Which of the following is NOT a valid SQL data type?

A) STRING

B) INTEGER

C) FLOAT

D) BOOLEAN

Answer: A) STRING

16. What is the purpose of the SQL keyword DISTINCT?

A) To remove duplicate rows from the result set

B) To sort the result set in descending order

C) To retrieve only a specific number of rows

D) To limit the columns returned by the SELECT statement

Answer: A) To remove duplicate rows from the result set

17. Which SQL function is used to find the maximum value in a column?

- A) MAX()
- B) MIN()
- C) AVG()
- D) SUM()

Answer: A) MAX()

18. Which SQL clause is used to specify conditions for grouped rows?

- A) WHERE
- B) HAVING
- C) GROUP BY
- D) ORDER BY

Answer: B) HAVING

19. Which of the following is NOT a valid SQL join type?

- A) INNER JOIN
- B) OUTER JOIN
- C) SIDE JOIN
- D) LEFT JOIN

Answer: C) SIDE JOIN

20. Which SQL statement is used to change the structure of a table?

- A) MODIFY TABLE
- B) CHANGE TABLE
- C) ALTER TABLE
- D) UPDATE TABLE

Answer: C) ALTER TABLE

21. Which of the following is an example of a NoSQL database?

- A) MySQL
- B) PostgreSQL
- C) MongoDB
- D) Oracle

Answer: C) MongoDB

22. What does the term "normalization" refer to in the context of database design?

- A) Adding redundancy to improve performance
- B) Removing redundancy to avoid data anomalies

- C) Indexing columns for faster retrieval
- D) Encrypting sensitive data

Answer: B) Removing redundancy to avoid data anomalies

23. Which SQL command is used to create a new database?

- A) CREATE DATABASE
- B) NEW DATABASE
- C) ADD DATABASE
- D) MAKE DATABASE

Answer: A) CREATE DATABASE

24. In a relational database, what is a foreign key used for?

- A) Ensuring data consistency between related tables
- B) Indexing columns for faster retrieval
- C) Defining the primary key of a table
- D) Removing duplicate rows from a table

Answer: A) Ensuring data consistency between related tables

25. Which SQL command is used to revoke privileges from a user in a database?

- A) REVOKE
- B) DENY
- C) REMOVE
- D) DISABLE

Answer: A) REVOKE

26. What is an advantage of computer networks?

- A) Increased security
- B) Reduced cost of hardware
- C) Decreased accessibility
- D) Limited scalability

Answer: B) Reduced cost of hardware

27. LAN stands for:

- A) Long Area Network
- B) Local Area Network
- C) Large Array Network
- D) Land Access Network

Answer: B) Local Area Network

28. Which of the following is an example of a WAN technology?

- A) Ethernet
- B) Bluetooth
- C) DSL
- D) Internet

Answer: D) Internet

29. What does MAN stand for in networking?

- A) Medium Area Network
- B) Mainstream Access Network
- C) Metropolitan Area Network
- D) Multiple Access Network

Answer: C) Metropolitan Area Network

30. WiFi is an example of which type of network?

- A) PAN
- B) LAN
- C) WAN
- D) MAN

Answer: B) LAN

31. Which technology is primarily used for connecting devices in close proximity, such as smartphones to headphones?

- A) Bluetooth
- B) Ethernet
- C) DSL
- D) Fiber Optics

Answer: A) Bluetooth

32. What is the main advantage of sensor networks?

- A) High bandwidth
- B) Long range communication
- C) Low power consumption
- D) Large storage capacity

Answer: C) Low power consumption

33. Vehicular networks primarily aim to improve:

- A) Traffic congestion
- B) Road safety

- C) Fuel efficiency
 - D) Vehicle speed
- Answer: B) Road safety

34. 5G communication promises:

- A) Lower latency
 - B) Slower speeds
 - C) Limited coverage
 - D) Decreased connectivity
- Answer: A) Lower latency

35. What is the World Wide Web?

- A) A collection of interconnected websites
 - B) A type of LAN
 - C) An email service provider
 - D) An operating system
- Answer: A) A collection of interconnected websites

36. Which markup language is used for structuring content on the web?

- A) HTML
 - B) CSS
 - C) XML
 - D) JavaScript
- Answer: A) HTML

37. CSS is primarily used for:

- A) Defining the structure of a webpage
 - B) Adding interactivity to a webpage
 - C) Styling the presentation of a webpage
 - D) Handling server-side scripting
- Answer: C) Styling the presentation of a webpage

38. Which markup language is known for its extensibility and compatibility with other markup languages?

- A) HTML
 - B) CSS
 - C) XML
 - D) JavaScript
- Answer: C) XML

39. Which of the following is a tool used for web designing?

- A) Photoshop
- B) MS Word
- C) PowerPoint
- D) Excel

Answer: A) Photoshop

40. What is the primary function of social media platforms?

- A) Online shopping
- B) Communication and networking
- C) File sharing
- D) Web browsing

Answer: B) Communication and networking

41. Which of the following is an example of an online social network?

- A) LinkedIn
- B) Google Search
- C) Amazon
- D) Wikipedia

Answer: A) LinkedIn

42. Information security primarily focuses on protecting:

- A) Hardware
- B) Software
- C) Data and information
- D) Network cables

Answer: C) Data and information

43. Cybersecurity aims to safeguard:

- A) Physical buildings
- B) Digital assets and infrastructure
- C) Natural resources
- D) Human resources

Answer: B) Digital assets and infrastructure

44. What is the purpose of cyber laws?

- A) To restrict internet access
- B) To regulate online activities and transactions
- C) To promote cyberbullying

D) To limit social media usage

Answer: B) To regulate online activities and transactions

45. What is a firewall?

A) A physical barrier around a computer

B) A security measure used to filter network traffic

C) A type of antivirus software

D) A hardware device used for storage

Answer: B) A security measure used to filter network traffic

46. Which protocol is commonly used for secure communication over the internet?

A) HTTP

B) FTP

C) SSL/TLS

D) UDP

Answer: C) SSL/TLS

47. What is a phishing attack?

A) A physical break-in to steal computer hardware

B) A fraudulent attempt to obtain sensitive information by disguising as a trustworthy entity

C) A type of virus that spreads through email

D) A form of social engineering for personal gain

Answer: B) A fraudulent attempt to obtain sensitive information by disguising as a trustworthy entity

48. What is the purpose of encryption?

A) To slow down network traffic

B) To compress data

C) To encode data to make it unreadable to unauthorized users

D) To increase the size of data packets

Answer: C) To encode data to make it unreadable to unauthorized users

49. Which of the following is an example of a physical security measure?

A) Antivirus software

B) Firewall

C) Biometric access control

D) Encryption

Answer: C) Biometric access control

50. What does VPN stand for?

A) Virtual Private Network

B) Very Personal Network

C) Virtual Public Network

D) Very Protected Network

Answer: A) Virtual Private Network

51. What is the purpose of a CAPTCHA?

A) To secure network routers

B) To prevent automated bots from accessing websites

C) To encrypt email communication

D) To improve internet speed

Answer: B) To prevent automated bots from accessing websites

52. Which of the following is a common biometric authentication method?

A) Password

B) PIN

C) Fingerprint

D) Security question

Answer: C) Fingerprint

53. What is the purpose of intrusion detection systems?

A) To detect and prevent unauthorized access to a network

B) To identify and respond to security threats

C) To encrypt data transmissions

D) To filter spam emails

Answer: B) To identify and respond to security threats

54. Which of the following is NOT a type of malware?

A) Virus

B) Trojan

C) Worm

D) Router

Answer: D) Router

55. What is the primary role of a network administrator?

A) Designing websites

- B) Managing and maintaining computer networks
- C) Developing software applications
- D) Conducting security audits

Answer: B) Managing and maintaining computer networks

56. Which of the following is an example of a symmetric encryption algorithm?

- A) RSA
- B) AES
- C) SHA-256
- D) ECC

Answer: B) AES

57. Which of the following is NOT a characteristic of a strong password?

- A) Contains special characters
- B) Easily guessable
- C) Long and complex
- D) Contains a mix of uppercase and lowercase letters

Answer: B) Easily guessable

58. Which organization is responsible for maintaining the Domain Name System (DNS)?

- A) ICANN
- B) IEEE
- C) IETF
- D) ISO

Answer: A) ICANN

59. What does HTTP stand for?

- A) Hypertext Transfer Protocol
- B) Hypertext Transport Protocol
- C) Hypertext Transmission Protocol
- D) Hypertext Terminal Protocol

Answer: A) Hypertext Transfer Protocol

60. Which HTTP method is used to retrieve data from a server?

- A) POST
- B) GET
- C) PUT

D) DELETE

Answer: B) GET

61. What is the purpose of a proxy server?

A) To provide faster internet speed

B) To filter and cache web content

C) To encrypt network traffic

D) To authenticate users

Answer: B) To filter and cache web content

62. Which of the following is NOT a common network topology?

A) Bus

B) Ring

C) Square

D) Star

Answer: C) Square

63. What is the purpose of a router in a network?

A) To connect devices within a LAN

B) To connect multiple LANs or WANs

C) To provide power to network devices

D) To store data temporarily

Answer: B) To connect multiple LANs or WANs

64. Which of the following protocols is used for email communication?

A) HTTP

B) FTP

C) SMTP

D) DNS

Answer: C) SMTP

65. Which of the following is a valid IPv6 address format?

A) 192.168.1.1

B) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

C) 255.255.255.0

D) 127.0.0.1

Answer: B) 2001:0db8:85a3:0000:0000:8a2e:0370:7334

66. What is the purpose of NAT (Network Address Translation)?

A) To translate domain names into IP addresses

- B) To hide internal IP addresses from external networks
- C) To encrypt network traffic
- D) To improve network performance

Answer: B) To hide internal IP addresses from external networks

67. Which of the following is NOT a type of DNS record?

- A) A
- B) MX
- C) IP
- D) CNAME

Answer: C) IP

68. Which layer of the OSI model is responsible for ensuring data integrity?

- A) Physical layer
- B) Data link layer
- C) Transport layer
- D) Presentation layer

Answer: C) Transport layer

69. Which of the following is NOT a type of wireless network security protocol?

- A) WEP
- B) WPA
- C) SSL
- D) WPA2

Answer: C) SSL

70. What does IoT stand for?

- A) Internet of Technology
- B) Internet of Telecommunication
- C) Internet of Things
- D) Internet of Trends

Answer: C) Internet of Things

71. Which of the following is a common method for securing wireless networks?

- A) MAC filtering
- B) IP filtering

- C) Port forwarding
- D) VPN

Answer: A) MAC filtering

72. Which of the following is a key component of a digital certificate?

- A) Username
- B) Password
- C) Public key
- D) Private key

Answer: C) Public key

73. Which of the following is a principle of secure coding?

- A) Obscurity
- B) Simplicity
- C) Complexity
- D) Unpredictability

Answer: B) Simplicity

74. What is the purpose of a honeypot in cybersecurity?

- A) To detect and deflect unauthorized access attempts
- B) To store sensitive information
- C) To filter spam emails
- D) To optimize network performance

Answer: A) To detect and deflect unauthorized access attempts

75. Which of the following is a common authentication factor?

- A) Something you know
- B) Something you see
- C) Something you smell
- D) Something you taste

Answer: A) Something you know

76. What is the primary function of an IoT device?

- A) To perform complex computations
- B) To connect to the internet and share data
- C) To play video games
- D) To process images and videos

Answer: B) To connect to the internet and share data

77. Which of the following is a key component of a robotic system?

- A) Actuators
- B) Virtual Reality headset
- C) Gaming console
- D) Printer

Answer: A) Actuators

78. In the context of drones, what does GPS stand for?

- A) Global Protection System
- B) Global Positioning System
- C) Geographic Positioning System
- D) General Purpose System

Answer: B) Global Positioning System

79. What is the main objective of supervised learning in Artificial Intelligence?

- A) To learn from unlabelled data
- B) To make predictions based on input-output pairs
- C) To optimize game performance
- D) To generate random outputs

Answer: B) To make predictions based on input-output pairs

80. Which programming language is commonly used for game development?

- A) Python
- B) Java
- C) C#
- D) HTML

Answer: C) C#

81. What task does Natural Language Processing primarily focus on?

- A) Analyzing and understanding human language
- B) Analyzing and understanding animal communication
- C) Analyzing and understanding machine language
- D) Analyzing and understanding images

Answer: A) Analyzing and understanding human language

82. Which of the following techniques is commonly used for image processing?

- A) OCR (Optical Character Recognition)
 - B) Speech Recognition
 - C) Genetic Algorithms
 - D) Sorting Algorithms
- Answer: A) OCR (Optical Character Recognition)

83. Which of the following is an example of a cloud computing service?

- A) Virtual Reality simulation
- B) Database as a Service (DBaaS)
- C) Desktop application
- D) Video editing software

Answer: B) Database as a Service (DBaaS)

84. What is the primary advantage of using cloud storage?

- A) Limited accessibility
- B) High maintenance cost
- C) Scalability and flexibility
- D) Slow data retrieval

Answer: C) Scalability and flexibility

85. Which of the following is NOT a characteristic of a cloud computing model?

- A) On-demand self-service
- B) Broad network access
- C) Limited resource pooling
- D) Rapid elasticity

Answer: C) Limited resource pooling

86. What is the purpose of an IoT gateway?

- A) To connect IoT devices to a local network
- B) To act as a physical barrier for IoT signals
- C) To prevent IoT devices from accessing the internet
- D) To limit the functionality of IoT devices

Answer: A) To connect IoT devices to a local network

87. Which of the following is an example of a humanoid robot?

- A) Roomba vacuum cleaner
- B) Boston Dynamics Spot robot
- C) Industrial robotic arm

D) Self-driving car

Answer: B) Boston Dynamics Spot robot

88. In reinforcement learning, what does an agent aim to maximize?

A) Immediate rewards

B) Long-term goals

C) Both immediate rewards and long-term goals

D) None of the above

Answer: C) Both immediate rewards and long-term goals

89. Which software is commonly used for developing 3D games?

A) Unreal Engine

B) Adobe Photoshop

C) Microsoft Excel

D) Notepad

Answer: A) Unreal Engine

90. What is the primary focus of sentiment analysis in natural language processing?

A) Identifying emotions expressed in text

B) Identifying grammar errors

C) Translating text from one language to another

D) Summarizing long documents

Answer: A) Identifying emotions expressed in text

91. Which technique is commonly used for object detection in image processing?

A) Convolutional Neural Networks (CNNs)

B) Decision Trees

C) Support Vector Machines (SVMs)

D) Linear Regression

Answer: A) Convolutional Neural Networks (CNNs)

92. What is the primary advantage of using cloud-based virtual machines?

A) Limited scalability

B) High cost

C) Accessibility from anywhere with internet connection

D) Slow processing speed

Answer: C) Accessibility from anywhere with internet connection

93. Which of the following is NOT a cloud deployment model?

- A) Public Cloud
- B) Private Cloud
- C) Hybrid Cloud
- D) Standalone Cloud

Answer: D) Standalone Cloud

94. What type of communication protocol is commonly used in IoT systems?

- A) TCP/IP
- B) HTTP
- C) MQTT
- D) FTP

Answer: C) MQTT

95. Which of the following is a potential application of drone technology?

- A) Online shopping
- B) Space exploration
- C) Underwater welding
- D) Agricultural monitoring

Answer: D) Agricultural monitoring

96. What is the primary objective of unsupervised learning in Artificial Intelligence?

- A) To make predictions based on input-output pairs
- B) To learn from labelled data
- C) To discover patterns in data without explicit guidance
- D) To optimize game performance

Answer: C) To discover patterns in data without explicit guidance

97. Which of the following is NOT a component of a typical game engine?

- A) Physics Engine
- B) Rendering Engine
- C) Artificial Intelligence Engine
- D) Audio Engine

Answer: C) Artificial Intelligence Engine

99. Which of the following is NOT a task typically associated with natural language processing?

- A) Speech Recognition
- B) Machine Translation
- C) Sentiment Analysis
- D) 3D Modeling

Answer: D) 3D Modeling

100. Which method is commonly used for video compression?

- A) ZIP compression
- B) MPEG compression
- C) PNG compression
- D) RAR compression

Answer: B) MPEG compression

101. Which cloud service model provides users with virtualized computing resources over the internet?

- A) SaaS (Software as a Service)
- B) IaaS (Infrastructure as a Service)
- C) PaaS (Platform as a Service)
- D) None of the above

Answer: B) IaaS (Infrastructure as a Service)

102. Which programming language is commonly used for developing Artificial Intelligence applications?

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

Answer: C) Python

103. What is the main function of a convolutional neural network (CNN) in image processing?

- A) Object recognition and detection
- B) Audio processing
- C) Text classification
- D) Network security

Answer: A) Object recognition and detection

104. What does SaaS stand for in cloud computing?

- A) Software as a Service

- B) Storage as a Service
- C) Security as a Service
- D) Server as a Service

Answer: A) Software as a Service

105. Which of the following is an example of a cloud computing deployment model?

- A) Local Cloud
- B) Personal Cloud
- C) Public Cloud
- D) Secret Cloud

Answer: C) Public Cloud

106. In IoT, what does the term "edge computing" refer to?

- A) Processing data at the central server
- B) Processing data at the edge of the network, closer to the source of data
- C) Processing data on IoT devices
- D) Processing data on the cloud

Answer: B) Processing data at the edge of the network, closer to the source of data

107. What is the primary objective of reinforcement learning in Artificial Intelligence?

- A) To make predictions based on input-output pairs
- B) To optimize game performance
- C) To discover patterns in unlabelled data
- D) To learn from interaction with an environment

Answer: D) To learn from interaction with an environment

108. Which of the following is a popular deep learning framework commonly used for image processing tasks?

- A) TensorFlow
- B) MATLAB
- C) Ruby on Rails
- D) Swift

Answer: A) TensorFlow

109. What is the primary goal of fog computing in IoT?

- A) To simulate weather conditions for training IoT devices

- B) To provide additional computational resources closer to the edge of the network
- C) To create artificial fog to obscure drone operations
- D) To improve network security

Answer: B) To provide additional computational resources closer to the edge of the network

110. Which of the following is NOT a component of an Artificial Intelligence system?

- A) Sensors
- B) Algorithms
- C) Datasets
- D) Actuators

Answer: D) Actuators

111. Which of the following is a potential application of Natural Language Processing?

- A) Predicting stock market trends
- B) Autonomous driving
- C) Weather forecasting
- D) Language translation

Answer: D) Language translation

112. Which of the following is NOT a common feature of cloud computing?

- A) On-demand resource allocation
- B) Pay-per-use pricing model
- C) Limited scalability
- D) Accessibility from anywhere with an internet connection

Answer: C) Limited scalability

113. What is the primary function of a virtual machine in cloud computing?

- A) To simulate physical hardware
- B) To perform high-speed calculations
- C) To host web applications
- D) To process image and video data

Answer: A) To simulate physical hardware

114. What is the primary role of an API (Application Programming Interface) in cloud computing?

- A) To provide a graphical user interface for cloud services
- B) To facilitate communication between different software components
- C) To encrypt data stored in the cloud
- D) To provide access to virtual reality environments

Answer: B) To facilitate communication between different software components

115. Which of the following is an example of a cloud storage service?

- A) Microsoft Word
- B) Google Drive
- C) Adobe Photoshop
- D) Mozilla Firefox

Answer: B) Google Drive

116. What is the primary purpose of a neural network in Artificial Intelligence?

- A) To mimic the human nervous system for data processing
- B) To optimize search engine algorithms
- C) To facilitate secure communication over the internet
- D) To generate random numbers

Answer: A) To mimic the human nervous system for data processing

117. Which of the following is NOT a key characteristic of edge computing?

- A) Centralized data processing
- B) Low latency
- C) Real-time data processing
- D) Reduced bandwidth usage

Answer: A) Centralized data processing

118. Which programming language is commonly used for implementing machine learning algorithms?

- A) Swift
- B) Python
- C) JavaScript
- D) C#

Answer: B) Python

119. What is the primary focus of computer vision in Artificial Intelligence?

- A) Understanding human emotions
- B) Analyzing and interpreting visual data

C) Generating random images

D) Text-to-speech conversion

Answer: B) Analyzing and interpreting visual data

120. Which of the following cloud computing deployment models offers the highest level of control and security?

A) Public Cloud

B) Private Cloud

C) Hybrid Cloud

D) Community Cloud

Answer: B) Private Cloud

121. What is the primary function of a virtual private network (VPN) in cloud computing?

A) To provide additional computational resources

B) To encrypt data transmitted over the internet

C) To host web applications

D) To simulate physical hardware

Answer: B) To encrypt data transmitted over the internet

122. Which of the following is a common application of Natural Language Processing in customer service?

A) Predicting stock market trends

B) Answering customer inquiries via chatbots

C) Simulating human emotions

D) Analyzing weather patterns

Answer: B) Answering customer inquiries via chatbots

123. Which of the following is NOT a benefit of using cloud computing services?

A) Increased scalability

B) Reduced upfront infrastructure costs

C) Limited accessibility

D) Improved flexibility

Answer: C) Limited accessibility

124. Which technique is commonly used for speech recognition in Natural Language Processing?

A) Convolutional Neural Networks (CNNs)

B) Recurrent Neural Networks (RNNs)

C) Genetic Algorithms

D) Decision Trees

Answer: B) Recurrent Neural Networks (RNNs)

125. Which cloud service model provides users with a platform to develop, run, and manage applications without the complexity of building and maintaining infrastructure?

A) SaaS (Software as a Service)

B) IaaS (Infrastructure as a Service)

C) PaaS (Platform as a Service)

D) None of the above

Answer: C) PaaS (Platform as a Service)

