Q1. What are the primary purposes of computer networks?

* Sharing cat photos Facilitating data sharing
* Sending handwritten letters Playing video games

Q2. How do computer networks support communication?

* By delivering pizzas By enabling data and resource sharing
* By predicting the weather By composing music

Q3. What is a common use of computer networks?

* Baking cookies Remote access and mobility
* Gardening Skydiving

Q4. What is the role of computer networks in collaboration?

Sharing secret recipes Enabling users to work together from different locations

Solving crossword puzzles Creating origami art

Q5. What is a star topology known for?

* Redundancy Circular shape
* Mesh connections High collision rates

Q6. Which topology forms a closed-loop structure?

Bus Ring Star Mesh

Q7. What topology offers high fault tolerance and redundancy?

* Bus Ring Star Mesh

Q8. In which topology do all devices share the same communication medium?

* Star Ring Bus Mesh

Q9. What is a collision domain in networking?

* A group of devices sharing the same MAC address
* A network segment where collisions can occur
* A domain for scheduling network tasks
* A domain for storing network d

Q10. How does the collision domain size affect network performance?

* It has no impact on performance
* Larger collision domains lead to better performance
* Smaller collision domains lead to better performance
* It determines the color of network cab

Q11. What mechanism helps prevent collisions in Ethernet networks?

Collision detection Collision avoidance

* Collision celebration Collision prediction

Q12. What can be done to reduce collisions within a collision domain?

* Increase the collision domain size
* Add more devices to the domain
* Implement collision detection algorithms
* Segment the network into smaller collision dom

Q13. What is the role of a broadcast domain in network communication?

* It ensures secure communication
* It limits the size of network traffic
* It enables devices to communicate with each other
* It defines the area where broadcasts are hea

Q14. How does a switch reduce the size of a broadcast domain compared to a hub?

* By making coffee
* By forwarding broadcasts to all ports
* By isolating devices into separate domains
* By broadcasting loud

Q15. What do VLANs (Virtual LANs) do in terms of broadcast domains?

* Increase the broadcast domain size
* Reduce the broadcast domain size
* Convert broadcasts into unicasts
* Broadcast to all devices in a netw

Q16. What are the implications of a large broadcast domain on network traffic?

* Faster data transfer
* Reduced network congestion
* Increased network traffic
* Improved network securi

Q17. What is the OSI model, and how many layers does it consist of?

* 4 layers
* 5 layers
* 6 layers
* 7 layer

Q18. In the OSI model, which layer is responsible for data encryption and decryption?

* Physical Layer Data Link Layer
* Presentation Layer Transport Lay

Q19. Which layer of the OSI model is primarily responsible for routing and logical addressing?

* Network Layer Transport Layer
* Session Layer Data Link Layer

Q20. What is the primary function of the Transport Layer in the OSI model?

* Ensuring data integrity Physical data transmission
* Logical addressing Establishing and managing connections

Q21. Which layer of the OSI model deals with error detection and correction at the bit level?

* Data Link Layer Physical Layer
* Transport Layer Network Layer

Q22. What is the purpose of the OSI model's Session Layer?

* Data encryption Managing user sessions
* Error detection Data compression

Q23. How many layers does the TCP/IP model consist of?

* 4 layers 5 layers
* 6 layers 7 layers

Q24. Which layer of the TCP/IP model corresponds to the OSI model's Transport Layer?

* Internet Layer Link Layer
* Transport Layer Application Layer

Q25. What is the primary advantage of the TCP/IP model over the OSI model?

* Simplicity and widespread adoption Enhanced security features
* Improved physical layer standards Greater flexibility in data presentation

Q26. In the TCP/IP model, which layer is responsible for addressing and routing data packets?

* Internet Layer Link Layer
* Transport Layer Application Layer

Q27. How does the OSI model compare to the TCP/IP model in terms of layer definitions?

* The layers have different names and numbers
* The layers have the same names but different numbers
* The layers have the same names and numbers
* The OSI model has more layers than the TCP/IP

Q28. Which model, OSI or TCP/IP, is more commonly used in practical network implementations today?

* OSI model TCP/IP model
* Both are equally popular Neither is used anymore

Q29. What are the primary functions of the Physical Layer in a network?

* Routing and addressing Data link control
* Bit-level transmission Logical addressing

Q30. What is the main advantage of using fiber optic cables over copper cables for data transmission?

* Lower cost Faster transmission speeds
* Greater flexibility Easier installation

Q31. Which of the following is an example of guided transmission media?

* Wireless
* Optical fiber
* Infrared
* Microwave Correct Answer: B

Q32. In wireless communication, what is the purpose of modulation and demodulation (modem)?

* To convert digital data into analog signals for transmission
* To encrypt and decrypt data packets
* To route data packets between networks
* To establish Wi-Fi connections Correct Answer: A

Q33. What type of wireless transmission is used in cellular telephone networks?

* Infrared
* Microwave
* Radio waves
* Bluetooth Correct Answer: C

Q34. Which of the following wireless technologies is commonly used for satellite-based internet connections?

* 4G LTE
* Wi-Fi
* VSAT (Very Small Aperture Terminal)
* NFC (Near Field Communication) Correct Answer: C

Q35. What are the advantages of using microwave transmission for long-distance communication?

* Low cost and ease of installation
* High data rates and low latency
* Immunity to interference and wide coverage
* Secure and encrypted communication Correct Answer: B

Q36. What is the role of a transceiver in wireless communication?

* Data encryption
* Signal amplification
* Transmitting and receiving signals
* Routing data packets Correct Answer: C

Q37. What is latency in network communication, and how does it relate to the Physical Layer?

* Latency is the delay in data transmission, affected by the transmission medium.
* Latency is the data rate of a communication channel.
* Latency is the protocol used to establish connections.
* Latency is the distance between network devices. Correct Answer: A

Q38. What is the key difference between half-duplex and full-duplex communication?

* Half-duplex can transmit data in both directions simultaneously, while full-duplex cannot.
* Half-duplex can only transmit data in one direction at a time, while full-duplex can transmit in both directions simultaneously.
* Half-duplex uses optical fibers, while full-duplex uses copper cables.
* Half-duplex is used in wireless communication, while full-duplex is used in wired communication.

Correct Answer: B

Q39. 1. What are the common types of errors that can occur in data transmission over a network?

* Bit errors
* Link errors
* Frame errors
* All of the above Correct Answer: D

Q40. 2. What is redundancy in the context of error detection and correction?

* The process of reducing data size for faster transmission
* The inclusion of extra information to detect and correct errors
* The removal of duplicate data from a message
* None of the above Correct Answer: B

Q41. 3. Which error detection technique uses a polynomial division to calculate a remainder that is added to the data for error checking?

* CRC (Cyclic Redundancy Check)
* Checksum
* Parity bit
* Hamming code Correct Answer: A

Q42. 4. What is the purpose of a checksum in error detection?

* To count the number of bits in a message
* To check for errors in the data by comparing the sum of bits to a predefined value
* To encrypt the data for secure transmission
* None of the above Correct Answer: B

Q43. 5. Which error correction technique can correct single-bit errors and detect double-bit errors in data?

* CRC
* Checksum
* Hamming code
* Parity bit Correct Answer: C

Q44. 6. What is the Hamming distance between two binary words of equal length?

* The number of bits that differ between the two words
* The total number of bits in the words
* The number of bits set to 1 in the words
* None of the above Correct Answer: A

Q45. 7. Which error detection method involves adding an extra bit to the data so that the total number of 1s is always even (or odd)?

* CRC
* Checksum
* Parity bit
* Hamming code Correct Answer: C

Q46. 8. What is the purpose of error detection and correction at the Data Link Layer?

* To ensure data confidentiality
* To prevent unauthorized access to the network
* To detect and correct errors in data transmission
* To establish network connections Correct Answer: C

Q47. 9. Which error detection technique is commonly used in Ethernet networks to detect errors in frames?

* CRC
* Checksum
* Parity bit
* Hamming code Correct Answer: A

Q48. 10. In error detection, what is the purpose of the receiver's acknowledgment (ACK) to the sender?

* To request retransmission of the entire data
* To confirm successful receipt of data
* To notify the sender of an error in the data
* To terminate the data transmission Correct Answer: B

Q49. 1. What is the ALOHA protocol used for in computer networks?

* Error correction
* Multiple access control
* Data encryption
* Packet routing Correct Answer: B

Q50. 2. In ALOHA, how is the transmission time divided into slots?

* Equally sized slots for all stations
* Unequally sized slots based on station priority
* Dynamically sized slots based on traffic load
* There are no slots in ALOHA Correct Answer: A

Q51. 3. What is the key disadvantage of the pure ALOHA protocol?

* High collision rate
* Low throughput
* Complex synchronization requirements
* Limited scalability Correct Answer: A

Q52. 4. What does CSMA stand for in CSMA/CA and CSMA/CD?

* Centralized Synchronization Media Access
* Carrier Sense Multiple Access
* Collision-Free Media Allocation
* Controlled Synchronization Medium Allocation Correct Answer: B

Q53. 5. In CSMA, what is the purpose of "carrier sense"?

* To detect collisions
* To sense the presence of a carrier signal
* To encrypt data packets
* To regulate access to the medium Correct Answer: B

Q54. 6. How does CSMA/CD (Carrier Sense Multiple Access with Collision Detection) handle collisions?

* Stations always transmit, and collisions are resolved by the central controller.
* Stations sense the collision and retransmit after a random backoff time.
* Collisions are prevented through strict time-slot allocation.
* Collisions are ignored, and the sender keeps transmitting. Correct Answer: B

Q55. 7. In CSMA/CA (Carrier Sense Multiple Access with Collision Avoidance), how are collisions avoided?

* Stations transmit simultaneously to reduce the chance of collision.
* Stations request permission before transmitting.
* Collisions are resolved by the central controller.
* Collisions are detected and corrected in real-time. Correct Answer: B

Q56. 8. What is the primary advantage of CSMA/CA over CSMA/CD in wireless networks?

* Lower latency
* Higher throughput
* Reduced collisions
* Simplicity of implementation Correct Answer: C

Q57. 9. Which protocol is commonly used in Ethernet LANs and employs CSMA/CD?

* ALOHA
* Token Ring
* Wi-Fi
* Ethernet Correct Answer: D

Q58. 10. What is the primary purpose of the contention window in CSMA/CA?

* To set the maximum data rate
* To specify the channel frequency
* To control the backoff time before retransmission
* To define the maximum frame size Correct Answer: C

Q59. 1. What does FDMA stand for in the context of channelization protocols?

* Frequency Division Multiple Access
* Frequency Data Management Algorithm
* Fast Digital Modulation Analysis
* Frequency Data Modulation Array Correct Answer: A

Q60. 2. In FDMA, how are multiple users allocated channels for communication?

* Users share the same frequency channel simultaneously.
* Each user is assigned a unique frequency channel.
* Users take turns transmitting on the same frequency.
* Channels are dynamically assigned based on deman Correct Answer: B

Q61. 3. What is the primary advantage of FDMA in terms of channel allocation?

* High flexibility and adaptability
* Low susceptibility to interference
* Efficient use of available bandwidth
* Simple implementation and low cost Correct Answer: C

Q62. 4. What does TDMA stand for in the context of channelization protocols?

* Time Division Media Allocation
* Time Division Multiple Access
* Transmission Data Management Algorithm
* Telecommunication Data Modulation Array Correct Answer: B

Q63. 5. In TDMA, how is the transmission time divided among multiple users sharing the same channel?

* Users transmit simultaneously on different time slots.
* Users transmit sequentially one after another.
* Users transmit in random order to minimize collisions.
* Users transmit on separate frequency channels. Correct Answer: A

Q64. 6. What is the key benefit of TDMA in terms of spectrum efficiency?

* High resistance to interference
* Lower latency in data transmission
* Efficient use of available bandwidth
* Reduced complexity of synchronization Correct Answer: C

Q65. 1. What is the primary goal of the reservation protocol in controlled access?

* Minimize latency
* Maximize throughput
* Ensure fairness
* Reduce collision probability Correct Answer: A

Q66. 2. In reservation-based protocols, how are time slots allocated to devices for transmission?

* Devices compete for slots in real-time.
* Slots are pre-allocated based on a reservation phase.
* Slots are allocated randomly to devices.
* Slots are assigned permanently to devices. Correct Answer: B

Q67. 3. What is a potential drawback of reservation-based protocols in dynamic networks?

* Inefficient use of bandwidth
* High collision rates
* Excessive overhead for slot allocation
* Limited scalability Correct Answer: C

Q68. 1. In polling-based protocols, who controls the communication and polling process?

* Devices independently poll each other.
* A central controller polls devices sequentially.
* Devices send messages whenever they want.
* Devices poll each other randomly. Correct Answer: B

Q69. 2. What is the advantage of using polling in controlled access networks?

* Low latency due to simultaneous transmission
* High throughput for all devices
* Predictable access to the shared medium
* Minimal overhead in the communication process Correct Answer: C

Q70. 3. What is a potential drawback of polling-based protocols in large networks with many devices?

* High collision rates
* Long waiting times for polling
* Difficulty in synchronization
* Inefficient use of bandwidth Correct Answer: B

Q71. 1. What is the fundamental concept behind token passing protocols in controlled access?

* Devices compete for access to the medium.
* Devices transmit when they have a token.
* Devices use polling to access the medium.
* Devices reserve time slots for transmission. Correct Answer: B

Q72. 2. In token passing, how is access to the shared medium controlled?

* Devices send requests for transmission.
* A token is passed sequentially among devices.
* Devices transmit data simultaneously.
* A central controller allocates time slots. Correct Answer: B

Q73. 3. What is a significant advantage of token passing protocols in controlled access networks?

* High flexibility in medium access
* Minimal collision probability
* Reduced overhead in communication
* Low latency due to parallel transmission Correct Answer: B

Q74. Which of the following is a valid IPv4 address format?

* 256.1.1
* 10.10.300
* 31.256.0
* 168.1.1000

Correct Answer: D

Q75. Which network class is primarily used for large-scale organizations and provides over 16 million host addresses?

* g., 10.0.0.0)
* g., 172.16.0.0)
* g., 192.168.0.0)
* g., 224.0.0.0)

Correct Answer: A

Q76. What is the default subnet mask for a Class B network?

* 0.0.0
* 255.0.0
* 255.255.0
* 255.255.255

Correct Answer: B

Q77. Which subnet mask does RIP v1 assume by default when sending route updates?

* 255.255.255)
* 255.255.0)
* 255.0.0)
* 0.0.0)

Correct Answer: C

Q78. What is the multicast address used by RIP v2 for sending route updates?

* 0.0.5
* 0.0.9
* 255.255.255
* 0.0.1

Correct Answer: B

Q79. Which type of protocol does UDP (User Datagram Protocol) represent: connectionless or connection-oriented?

* Connectionless
* Connection-oriented
* Both connectionless and connection-oriented
* Neither connectionless nor connection-oriented Correct Answer: A

Q80. TCP (Transmission Control Protocol) is an example of which type of protocol: connectionless or connection-oriented?

* Connectionless
* Connection-oriented
* Both connectionless and connection-oriented
* Neither connectionless nor connection-oriented Correct Answer: B

Q81. In a connection-oriented protocol like TCP, what is the purpose of the three-way handshake during connection establishment?

* To confirm data delivery
* To exchange encryption keys
* To synchronize sequence numbers
* To establish a reliable connection Correct Answer: C

Q82. In a connection-oriented protocol like TCP, if a segment is not acknowledged by the receiver, what action does the sender take?

* Retransmits the segment
* Drops the segment and continues
* Reduces the transmission speed
* Sends an error message to the receiver Correct Answer: A

Q83. UDP is often used for real-time applications like streaming and online gaming. What advantage does UDP offer for these applications?

* Reliable data delivery is not required
* Lower latency and reduced overhead
* Greater error checking and correction
* Enhanced security and encryption Correct Answer: B

Q84. What is the primary role of the Transport Layer protocols such as TCP and UDP?

* To transmit data between devices
* To establish network connections
* To encrypt data for secure transmission
* To manage the physical network Correct Answer: A

Q85. Which Transport Layer protocol is commonly used for secure, encrypted data transmission on the web?

* FTP
* HTTPs
* SNMP
* ICMP Correct Answer: B

Q86. Which Transport Layer protocol is designed for email communication and is responsible for sending and receiving emails?

* HTTP
* SMTP
* SNMP
* DNS Correct Answer: B

Q87. Which Transport Layer protocol is often used for file transfer and allows for efficient, bulk data transfer?

* FTP
* SNMP
* HTTP
* SMTP Correct Answer: A

Q88. What is the purpose of port numbers in the Transport Layer protocols?

* To identify the physical interface of a device
* To specify the device's IP address
* To identify the application or service
* To determine the device's location Correct Answer: C

Q89. What does TCP stand for in the context of networking?

* Transmission Control Protocol
* Textual Communication Protocol
* Transport Control Protocol
* Telecommunication Connection Protocol Correct Answer: A

Q90. Which TCP flag is used to initiate the connection setup in the TCP three-way handshake?

* ACK (Acknowledgment)
* SYN (Synchronize)
* RST (Reset)
* FIN (Finish) Correct Answer: B

Q91. In TCP, what term refers to the process of ensuring that data segments are received by the destination and in the correct order?

* Segmentation
* Flow control
* Error correction
* Sequence control Correct Answer: D

Q92. In a TCP connection, which side, the sender or receiver, acknowledges the successful receipt of data segments?

* Only the sender
* Only the receiver
* Both the sender and receiver
* Neither the sender nor receiver Correct Answer: B

Q93. What is the purpose of the TCP FIN (Finish) flag during the connection termination process?

* To acknowledge data receipt and continue communication
* To reset the connection
* To initiate the connection termination
* To establish a new connection Correct Answer: C

Q94. What does the term "handshaking" refer to in the context of the TCP three-way handshake?

* A process of physical handshakes between devices
* An agreement to establish a connection
* An authentication method
* A security protocol Correct Answer: B

Q95. In the TCP three-way handshake, what does the SYN (Synchronize) segment indicate to the receiving device?

* The sender is ready to receive data
* The sender is terminating the connection
* The sender is synchronizing sequence numbers
* The sender is requesting encryption Correct Answer: C

Q96. In the TCP three-way handshake, after the client sends a SYN segment, what action does the server take?

* The server responds with a SYN-ACK segment
* The server sends data
* The server acknowledges the client's request
* The server terminates the connection Correct Answer: A

Q97. Which transport layer protocol uses a message format with no header checksum, providing minimal overhead?

* TCP
* UDP
* IP
* HTTP Correct Answer: B

Q98. What is the maximum length, in bytes, of the UDP message payload (data) that can be accommodated in a single packet?

* 512 bytes
* 1,500 bytes
* 65,535 bytes
* 4,096 bytes Correct Answer: C

Q99. Which field in the TCP message header indicates the number of 32-bit words in the TCP header itself?

* Window size
* Data offset
* Checksum
* Acknowledgment number Correct Answer: B

Q100. What field in the TCP message format specifies the maximum number of bytes the sender is willing to accept in one message?

* Checksum
* Sequence number
* Window size
* Acknowledgment number Correct Answer: C

Q101. In the TCP message format, what is the purpose of the Urgent Pointer field?

* To indicate the start of a new message
* To specify the sender's IP address
* To identify the data sequence number
* To indicate the end of the message Correct Answer: D

Q102. In congestion control, what does "window-based" congestion control refer to?

* Controlling congestion by limiting the number of packets sent
* Controlling congestion based on network latency
* Controlling congestion by adjusting window size
* Controlling congestion using traffic shaping Correct Answer: C

Q103. In QoS, what is "jitter," and why is it important to control in real-time communication?

* Jitter refers to network congestion
* Jitter is the variation in packet arrival times
* Jitter indicates the number of lost packets
* Jitter measures data throughput Correct Answer: B

Q104. What is the primary purpose of a token bucket in traffic shaping for QoS?

* To store packets temporarily
* To prioritize voice traffic
* To control the rate of packet transmission
* To increase network capacity Correct Answer: C

Q105. Which QoS mechanism involves marking packets with different priority levels based on their importance or type of traffic?

* Packet switching
* Quality of Service (QoS)
* Traffic shaping
* Packet loss prevention Correct Answer: B

Q106. What is the primary function of the Domain Name System (DNS) in computer networks?

* To encrypt data transmissions
* To resolve human-readable domain names to IP addresses
* To manage email communication
* To perform network monitoring Correct Answer: B

Q107. What is the significance of a DNS cache in speeding up domain name resolution?

* It stores encrypted DNS records
* It stores frequently accessed DNS records
* It encrypts DNS traffic
* It manages email servers Correct Answer: B

Q108. What is a top-level domain (TLD) in the context of DNS?

* The highest level of the DNS hierarchy
* A domain that exclusively uses numeric characters
* The domain name of a web server
* A domain used for email addressing Correct Answer: A

Q109. Which DNS record type is used to specify the mail servers responsible for receiving email for a domain?

* A (Address)
* PTR (Pointer)
* MX (Mail Exchanger)
* CNAME (Canonical Name)

Correct Answer: C

Q110. In remote logging, what is the role of a log collector?

* To encrypt log data
* To centralize and store log data from various sources
* To manage email servers
* To generate network traffic logs Correct Answer: B

Q111. Who is credited with inventing email, and when was it first introduced?

* Bill Gates in 1995
* Ray Tomlinson in the early 1970s
* Mark Zuckerberg in 2004
* Tim Berners-Lee in 1989 Correct Answer: B

Q112. How does the Simple Mail Transfer Protocol (SMTP) play a role in email transmission?

* It encrypts email messages
* It defines the rules for routing and sending email
* It manages email storage
* It controls email access Correct Answer: B

Q113. How does email address formatting adhere to the [username@domain.com](mailto:username@domain.com) structure?

* It uses IP addresses for email
* It separates username and domain with a period
* It encrypts email data
* It encrypts email headers Correct Answer: B

Q114. What is the purpose of email aliases and distribution lists in email communication?

* To encrypt email headers
* To manage email attachments
* To route email traffic
* To simplify sending emails to groups Correct Answer: D

Q115. How does email support the concept of folders and organizational structures?

* By encrypting email contents
* By allowing users to categorize and store emails
* By compressing email headers
* By securing email attachments Correct Answer: B

Q116. What are the basic components of an FTP connection?

* Username, password, and email client
* Server, client, and encryption key
* Sender, receiver, and IP address
* Header, footer, and routing table Correct Answer: B

Q117. How does FTP handle file transfers between different operating systems?

* It converts email attachments
* It uses a universal format for all files
* It encrypts email messages
* It encrypts email headers Correct Answer: B

Q118. What are some common security risks associated with FTP, and how can they be mitigated?

* Lack of email encryption
* Unauthorized access and data interception
* Excessive email logs storage
* Slow email delivery due to FTP use Correct Answer: B

Q119. What are web servers, and how do they serve web content?

* Servers for secure email delivery
* Computers that store and distribute web pages
* Devices for email encryption
* Routers for FTP file transfers Correct Answer: B

Q120. What is the purpose of HTML (Hypertext Markup Language) in web development?

* It encrypts email contents
* It defines the structure and content of web pages
* It manages email attachments
* It optimizes email routing Correct Answer: B

Q121. What is HTTP (Hypertext Transfer Protocol), and what is its primary purpose?

* A protocol for secure email delivery
* A protocol for transferring files
* A protocol for web communication
* A method of email encryption Correct Answer: C

Q122. What is the purpose of cookies in HTTP, and how are they used?

* They are email attachments for web pages
* They store session information
* They encrypt email data
* They optimize email routing Correct Answer: B

Q123. What is the role of HTTP headers in web communication, and what types of information do they convey?

* They are email headers for web pages
* They indicate the content type and length
* They manage email routing
* They encrypt email attachments Correct Answer: B

Q124. How does SMTP facilitate email transmission between email clients and email servers?

* It encrypts email headers
* It uses email attachments for transmission
* It relays email messages
* It optimizes email routing Correct Answer: C

Q125. Explain the roles of SMTP clients (MUAs) and their interactions with SMTP servers in sending emails.

* Clients compose email content
* Clients store email attachments
* Clients encrypt email headers
* Clients optimize email delivery Correct Answer: A

Q126. How does SMTP ensure the reliability of email delivery, and what mechanisms are in place for handling failed deliveries?

* It uses email encryption methods
* It tracks email logs for errors
* It implements retries and queuing
* It optimizes email routing Correct Answer: C

Q127. What are SNMP agents and managers, and how do they interact in network management?

* They are encryption methods for emails
* Agents collect and report data, managers
* They manage email routing
* They compress email attachments Correct Answer: B

Q128. What are SNMP community strings, and how do they control access to SNMP-managed devices?

* They are email attachments for web pages
* They are authentication keys for SNMP
* They are used to encrypt email data
* They specify SNMP server addresses Correct Answer: B

Q129. What types of information can SNMP provide about network devices and resources?

* It tracks email logs for errors
* Configuration settings, performance metrics
* It encrypts email headers
* It manages email logs Correct Answer: B

Q130. What is the purpose of SNMP MIBs (Management Information Bases), and how are they organized?

* They are email logs for SNMP messages
* They store SNMP data and are organized hierarchically
* They encrypt email contents
* They manage email routing Correct Answer: B

Q131. How does network segmentation contribute to security services, and what are some common segmentation methods?

* It encrypts network traffic
* It improves network performance
* It isolates network segments
* It manages network authentication Correct Answer: C

Q132. What is the role of disaster recovery planning in network security, and how does it ensure business continuity?

* It ensures data confidentiality
* It verifies user identities
* It restricts unauthorized access
* It prepares for unforeseen disruptions Correct Answer: D

Q133. How does encryption contribute to data security, and what are common encryption algorithms used in network security?

* It ensures data confidentiality
* It verifies user identities
* It restricts unauthorized access
* It optimizes network performance Correct Answer: A

Q134. What is the purpose of digital signatures in network security, and how do they verify the authenticity of data?

* They encrypt network traffic
* They improve user authentication
* They authenticate the sender's identity
* They optimize network routing Correct Answer: C

Q135. Explain the significance of end-to-end encryption in securing data transmission across networks.

* It ensures data confidentiality
* It optimizes network routing
* It restricts unauthorized access
* It detects and responds to incidents Correct Answer: A

Q136. What is the primary purpose of a digital signature in network security?

* To encrypt network traffic
* To restrict unauthorized access
* To verify the authenticity and integrity of data
* To optimize network routing Correct Answer: C

Q137. What cryptographic key is typically used for generating a digital signature?

* Public key
* Private key
* Symmetric key
* Session key Correct Answer: B

Q138. Explain the concept of a revocation list (CRL) in digital certificate management.

* It ensures data confidentiality
* It verifies user identities
* It restricts unauthorized access
* It lists revoked or expired digital certificates Correct Answer: D

Q139. What is the OSI Model, and how does it work?

* A protocol for wireless communication.
* A conceptual framework with seven layers that standardizes networking functions.
* A type of firewall used in enterprise networks.
* A software for network configuration. Correct Answer: B

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* The inclusion of extra information to detect and correct errors
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* Stations transmit simultaneously to reduce the chance of collision.
* Stations request permission before transmitting.
* Collisions are resolved by the central controller.
* Collisions are detected and corrected in real-time. Correct Answer: B

Q145. What does TDMA stand for in the context of channelization protocols?

* Time Division Media Allocation
* Time Division Multiple Access
* Transmission Data Management Algorithm
* Telecommunication Data Modulation Array Correct Answer: B

Q146. What is the primary goal of the reservation protocol in controlled access?

* Minimize latency
* Maximize throughput
* Ensure fairness
* Reduce collision probability Correct Answer: A

Q147. What is a potential drawback of reservation-based protocols in dynamic networks?

* Inefficient use of bandwidth
* High collision rates
* Excessive overhead for slot allocation
* Limited scalability Correct Answer: C

Q148. What is a potential drawback of polling-based protocols in large networks with many devices?

* High collision rates
* Long waiting times for polling
* Difficulty in synchronization
* Inefficient use of bandwidth Correct Answer: B

Q149. What is a significant advantage of token passing protocols in controlled access networks?

* High flexibility in medium access
* Minimal collision probability
* Reduced overhead in communication
* Low latency due to parallel transmission Correct Answer: B

Q150. In the Stop and Wait protocol, what is the role of the sender after sending a data frame?

* Continue sending data frames
* Wait for an acknowledgment (ACK) from the receiver
* Send the next data frame immediately
* Request retransmission of the data frame Correct Answer: B

Q151. What is the major drawback of the Stop and Wait protocol in terms of efficiency?

* High throughput
* Low latency
* Inefficient use of bandwidth
* Minimal overhead Correct Answer: C

Q152. In the context of the Stop and Wait protocol, what is the significance of using timers?

* To synchronize sender and receiver
* To measure transmission speed
* To manage network congestion
* To handle timeouts and retransmissions Correct Answer: D

Q153. Which factor makes the Stop and Wait protocol less suitable for high-speed networks and long-distance communication?

* Reliability
* Simplicity
* Low overhead
* Efficiency Correct Answer: D

Q154. Which data link layer protocol is known for its simplicity and involves the sender waiting for an acknowledgment before sending the next frame?

* Go-Back-N
* Selective Repeat
* Stop and Wait
* Automatic Repeat Request (ARQ) Correct Answer: C

Q155. Which data link layer protocol uses a sliding window approach, allowing the sender to transmit multiple frames before waiting for acknowledgments?

* Go-Back-N
* Selective Repeat
* Stop and Wait
* Automatic Repeat Request (ARQ) Correct Answer: A

Q156. Which ARQ protocol provides more efficient error recovery by retransmitting only the frames with errors, rather than the entire window?

* Go-Back-N
* Selective Repeat
* Stop and Wait
* Automatic Repeat Request (ARQ) Correct Answer: B

Q157. In the Selective Repeat ARQ protocol, what is the key advantage over Go-Back-N in terms of efficiency and retransmissions?

* It retransmits only frames with errors
* It has a smaller window size
* It offers lower throughput
* It requires fewer acknowledgments Correct Answer: A

Q158. What is the primary disadvantage of Selective Repeat ARQ compared to Go-Back-N in terms of complexity and implementation?

* Increased complexity of sender and receiver
* Smaller window size
* Lower efficiency
* Higher overhead for acknowledgment Correct Answer: A

Q159. Which of the following best describes an IP packet in the context of the Network Layer?

* A logical group of data bytes
* A physical network cable
* A data frame within a switch
* A wireless access point Correct Answer: A

Q160. In IPv4, how many bits are used to represent an IP address?

* 8 bits
* 16 bits
* 32 bits
* 64 bits Correct Answer: C

Q161. Which part of an IPv4 address designates the network portion?

* The first two octets
* The last two octets
* The third octet
* The fourth octet Correct Answer: A

Q162. What is the maximum number of IPv4 addresses that can exist within a single subnet?

* 255
* 256
* 2^32 - 1
* 2^32 - 2

Correct Answer: C

Q163. Which routing algorithm updates routing tables based on the number of hops to a destination and shares this information with neighboring routers?

* Distance Vector Routing (DVR)
* Link State Routing (LSR)
* Static Routing
* Default Routing (DR) Correct Answer: A

Q164. What is a routing metric in the context of routing algorithms?

* The number of routers in the network
* A value used to determine the best path
* The physical distance between routers
* The number of hops to the destination Correct Answer: B

Q165. What is the key advantage of Link State Routing (LSR) over Distance Vector Routing (DVR)?

* Simplicity and ease of implementation
* Faster convergence
* Lower bandwidth consumption
* Resistance to routing loops and more accurate routing Correct Answer: D

Q166. ICMP (Internet Control Message Protocol) is primarily used for what purpose in IP networks?

* Network address translation (NAT)
* Error reporting and diagnostics
* Secure data transmission
* IP address allocation and management Correct Answer: B

Q167. What is the purpose of IPv6 (Internet Protocol version 6) in comparison to IPv4?

* To reduce the number of available IP addresses
* To improve network security and encryption
* To enhance support for multimedia and IoT applications
* To provide backward compatibility with IPv4 Correct Answer: C

Q168. What is the maximum number of unique IP addresses that can be represented by IPv6?

* 2^64 (approximately 18.4 quintillion addresses)
* 2^16 (approximately 65,536 addresses)
* 2^32 (approximately 4.3 billion addresses)
* 2^128 (approximately 340 undecillion addresses) Correct Answer: D

Q169. In IPv6, what type of address is used to identify a group of devices that may belong to different networks?

* Unicast address
* Anycast address
* Multicast address
* Broadcast address Correct Answer: C

Q170. What is the primary reason for the transition from IPv4 to IPv6 in modern networking?

* To improve network performance and speed
* To reduce the complexity of routing tables
* To increase backward compatibility with legacy systems
* To accommodate the growing number of internet-connected devices Correct Answer: D

Q171. In a Class C network, how many bits are assigned to the host portion of the IP address?

* 8 bits
* 16 bits
* 24 bits
* 32 bits Correct Answer: C

Q172. What is the maximum number of host addresses that can be assigned in a Class C network with a subnet mask of 255.255.255.224?

* 8
* 16
* 32
* 64

Correct Answer: C

Q173. What is the primary purpose of a subnet mask in IP networking?

* To indicate the default gateway for the network
* To identify the network and host portions
* To encrypt data during transmission
* To assign unique hostnames to devices in the network Correct Answer: B

Q174. What is the term for borrowing bits from the host portion of an IP address to create subnets?

* Subnet borrowing
* Network slicing
* Bit masking
* Subnetting Correct Answer: D

Q175. What is the primary characteristic of a static routing algorithm?

* It dynamically adjusts routes based on traffic
* It requires manual configuration
* It uses metrics like hop count for routing
* It adapts to network changes automatically Correct Answer: B

Q176. In a network topology where link costs represent delay, which routing algorithm is suitable for minimizing latency?

* RIP (Routing Information Protocol)
* BGP (Border Gateway Protocol)
* OSPF (Open Shortest Path First)
* EIGRP (Enhanced Interior Gateway Routing Protocol) Correct Answer: C

Q177. Which routing protocol typically uses the Bellman-Ford algorithm for path selection?

* OSPF (Open Shortest Path First)
* RIP (Routing Information Protocol)
* BGP (Border Gateway Protocol)
* EIGRP (Enhanced Interior Gateway Routing Protocol) Correct Answer: B

Q178. In dynamic routing, what does the term "metric" refer to?

* The maximum hop count to a destination
* A unique identifier for each route
* A measurement used to determine route preference
* The number of routers in the network Correct Answer: C

Q179. Which type of routing algorithm adjusts routes based on real-time network conditions?

* Dynamic routing algorithms
* Static routing algorithms
* Shortest Path Routing algorithms
* Link-State routing algorithms Correct Answer: A

Q180. What does RIP stand for in the context of routing protocols?

* Routing Information Protocol
* Reliable Internet Protocol
* Routing Internet Protocol
* Remote Information Protocol Correct Answer: A

Q181. What is the maximum hop count allowed in RIP v1 for a valid route?

* 10 hops
* 15 hops
* 16 hops
* 100 hops Correct Answer: C

Q182. Which metric does RIP use to measure the distance to a destination network?

* Hop count
* Bandwidth
* Delay
* Reliability Correct Answer: A

Q183. What is the purpose of the RIP "split horizon" rule?

* To prevent routing loops
* To optimize network traffic
* To split route updates into segments
* To ensure equal distribution of routes Correct Answer: A

Q184. What does OSPF stand for in the context of routing protocols?

* Open Shortest Path Forwarding
* Open System Path Finder
* Open Source Path Forwarding
* Open Shortest Path First Correct Answer: D

Q185. OSPF uses a link-state routing algorithm. What type of information is stored in OSPF's link- state database?

* The routing tables of all routers
* A list of all network IDs
* Information about the routers in the AS
* The number of hops to reach each router Correct Answer: C

Q186. What is the purpose of OSPF's Designated Router (DR) and Backup Designated Router (BDR) in a multi-access network?

* To reduce OSPF routing overhead
* To maintain network stability
* To optimize the use of OSPF areas
* To increase OSPF's compatibility with RIP Correct Answer: B

Q187. What OSPF packet type is used by routers to discover neighbors and establish adjacencies?

* Link-state advertisements (LSAs)
* OSPF Hello packets
* OSPF Database Description (DBD) packets
* OSPF Link State Update (LSU) packets Correct Answer: B

Q188. In OSPF, what is an ASBR (Autonomous System Border Router)?

* A router that connects to the internet
* A router that connects to an OSPF area
* A router that connects to a different AS
* A router that connects to the backbone area Correct Answer: C

Q189. What does EIGRP stand for in the context of routing protocols?

* Enhanced Internet Gateway Routing Protocol
* Enhanced Interior Gateway Routing Protocol
* Efficient Internet Gateway Routing Protocol
* Enhanced Interior Gateway Routing Process Correct Answer: B

Q190. In EIGRP, what is a feasible successor?

* A backup route with a higher metric
* A loop-free backup route
* A route advertised by an ASBR
* A virtual link to a remote router Correct Answer: B

Q191. EIGRP uses a composite metric to calculate the best path to a destination. What is this metric called?

* Cost metric
* Bandwidth-delay product
* EIGRP metric
* Successor metric Correct Answer: C

Q192. What is the administrative distance of EIGRP?

* 90
* 100
* 110
* 120

Correct Answer: A

Q193. What is the primary reason for using EIGRP in a Cisco network environment?

* Compatibility with other vendors' routers
* Scalability
* Support for classless routing
* Support for open-standard routing protocols Correct Answer: C

Q194. What does BGP stand for in the context of routing protocols?

* Border Gateway Protocol
* Best Gateway Protocol
* Border Gateway Process
* Basic Gateway Protocol Correct Answer: A

Q195. BGP is classified into two main categories based on its role in routing. What are these categories?

* Internal BGP (iBGP) and External BGP (eBGP)
* Border BGP and Core BGP
* Simple BGP and Complex BGP
* Basic BGP and Advanced BGP Correct Answer: A

Q196. What is the administrative distance of BGP?

* 90
* 100
* 110
* 120

Correct Answer: B

Q197. In the Transport Layer, what service ensures that data units are delivered error-free and in the correct order?

* Segmentation and reassembly
* Error detection and correction
* Flow control
* Multiplexing Correct Answer: C

Q198. What is the primary purpose of segmentation in the Transport Layer?

* Data encryption
* Breaking large messages into smaller segments
* Error detection and correction
* End-to-end communication Correct Answer: B

Q199. What type of communication does the Transport Layer provide: connectionless or connection- oriented?

* Connectionless
* Connection-oriented
* Both connectionless and connection-oriented
* Neither connectionless nor connection-oriented Correct Answer: C

Q200. Which Transport Layer service allows the receiver to detect and correct errors in the data?

* Flow control
* Error detection and correction
* Multiplexing
* Segmentation and reassembly Correct Answer: B

Q201. Which Transport Layer service provides a means of multiplexing, demultiplexing, and identifying different data streams?

* Flow control
* Multiplexing
* Error detection and correction
* Segmentation and reassembly Correct Answer: B

Q202. In a connectionless protocol like UDP, are acknowledgments sent to confirm successful data transmission?

* Yes
* No
* It depends on the application
* Acknowledgments are optional Correct Answer: B

Q203. Which type of protocol provides reliable, error-checked, and ordered data delivery: connectionless or connection-oriented?

* Connectionless
* Connection-oriented
* Both connectionless and connection-oriented
* Neither connectionless nor connection-oriented

Correct Answer: B

Q204. Which type of protocol is more suitable for applications that require low-latency communication?

* Connectionless
* Connection-oriented
* Both connectionless and connection-oriented
* Neither connectionless nor connection-oriented Correct Answer: A

Q205. Which type of protocol is less complex in terms of overhead and resource usage: connectionless or connection-oriented?

* Connectionless
* Connection-oriented
* Both connectionless and connection-oriented
* Neither connectionless nor connection-oriented Correct Answer: A

Q206. In a connection-oriented protocol like TCP, how are data segments organized and identified for proper sequencing at the receiver?

* Using sequence numbers
* Using port numbers and IP addresses
* Using timestamps and checksums
* Using packet identifiers Correct Answer: A

Q207. Which Transport Layer protocol provides a connectionless, unreliable, and low-overhead data transfer service?

* TCP
* SMTP
* UDP
* HTTP Correct Answer: C

Q208. In the Transport Layer, which protocol is responsible for reliable, error-checked data delivery with flow control?

* UDP
* ICMP
* HTTP
* TCP Correct Answer: D

Q209. What is the primary difference between TCP (Transmission Control Protocol) and UDP (User Datagram Protocol)?

* TCP provides reliable, ordered data delivery, while UDP offers connectionless, unreliable delivery.
* TCP is faster than UDP.
* UDP provides encryption, while TCP does not.
* TCP is used for video streaming, while UDP is used for web browsing. Correct Answer: A

Q210. In a Transport Layer protocol like TCP, how is data sequencing achieved to ensure that packets are delivered in the correct order?

* Using sequence numbers
* Using timestamps
* Using encryption keys
* Using checksums Correct Answer: A

Q211. Which Transport Layer protocol is associated with the World Wide Web and is used for fetching web pages and data?

* FTP
* SMTP
* HTTP
* SNMP Correct Answer: C

Q212. What is the purpose of the TCP three-way handshake during the establishment of a connection?

* To synchronize sequence numbers
* To encrypt the data
* To establish a secure tunnel
* To transmit data Correct Answer: A

Q213. During the TCP three-way handshake, what happens after the client sends a SYN (Synchronize) segment to the server?

* The server responds with a SYN-ACK segment
* The client sends data
* The server acknowledges the client's request
* The client acknowledges the server's response Correct Answer: A

Q214. What is the primary advantage of TCP's reliable data delivery mechanism over UDP's connectionless approach?

* Lower latency and reduced overhead
* Enhanced security
* Reliable and ordered data delivery
* Greater scalability and efficiency Correct Answer: C

Q215. Which TCP flag is used to indicate the end of data transmission and to initiate connection termination?

* ACK (Acknowledgment)
* SYN (Synchronize)
* RST (Reset)
* FIN (Finish) Correct Answer: D

Q216. In TCP, what is the purpose of the ACK (Acknowledgment) flag?

* To acknowledge successful data receipt
* To request data retransmission
* To reset the connection
* To synchronize sequence numbers Correct Answer: A

Q217. During the TCP three-way handshake, which side initiates the process by sending a SYN (Synchronize) segment?

* The server
* The client
* Both the server and client
* Neither the server nor client Correct Answer: B

Q218. What is the purpose of the SYN-ACK (Synchronize-Acknowledgment) segment sent by the receiving device in the TCP three-way handshake?

* To acknowledge the receipt of data and continue communication
* To reset the connection
* To initiate the connection termination
* To request data retransmission Correct Answer: A

Q219. What is the final step in the TCP three-way handshake process after both sides have exchanged SYN and ACK segments?

* Data transmission can begin
* The connection is terminated
* Data segmentation is performed
* An acknowledgment is sent Correct Answer: A

Q220. In the UDP message format, what is the purpose of the source port number field?

* To identify the destination host
* To identify the source host
* To track the sequence number
* To specify the data length Correct Answer: B

Q221. In TCP, what is the purpose of the Sequence Number field in the message header?

* To identify the destination port
* To track the number of packets received
* To keep track of the order of sent data
* To provide error detection Correct Answer: C

Q222. In the TCP message format, what is the role of the Acknowledgment (ACK) flag?

* To acknowledge the receipt of data
* To reset the connection
* To indicate the end of the message
* To request data retransmission Correct Answer: A

Q223. Which field in the UDP message format is used to perform error checking on the message header and data?

* Source port
* Destination port
* Checksum
* Length Correct Answer: C

Q224. What is the primary goal of congestion control mechanisms in computer networks?

* To maximize network throughput
* To minimize packet loss and delays
* To increase the network's physical capacity
* To prioritize multimedia traffic Correct Answer: B

Q225. Which QoS technique allows network administrators to assign higher or lower priorities to different types of traffic?

* Traffic shaping
* Packet switching
* Quality of Service (QoS)
* Error correction Correct Answer: C

Q226. What is the primary metric used to measure the quality of voice and video communication in QoS evaluations?

* Packet loss rate
* Round-trip time (RTT)
* Jitter
* Mean Opinion Score (MOS) Correct Answer: D

Q227. What is a common technique for mitigating network congestion by temporarily holding packets before transmission?

* Quality of Service (QoS)
* Traffic shaping
* Congestion control
* Jitter control Correct Answer: B

Q228. Which DNS record type is used to associate an IP address with a domain name?

* MX (Mail Exchanger)
* PTR (Pointer)
* A (Address)
* CNAME (Canonical Name) Correct Answer: C

Q229. What is the purpose of a DNS recursive query?

* To obtain a DNS cache entry
* To query the root DNS server
* To resolve the entire DNS hierarchy
* To secure email communications Correct Answer: C

Q230. In DNS, what does an authoritative DNS server do?

* It provides DNS caching services
* It has the final say on the DNS resolution for a domain
* It encrypts DNS queries
* It manages email traffic Correct Answer: B

Q231. What does the term "DNS propagation" refer to in DNS management?

* The process of encrypting DNS records
* The delay in DNS record updates propagating across the Internet
* The speed of DNS query resolution
* The process of securing email communication Correct Answer: B

Q232. How does remote logging contribute to security incident detection and response?

* By encrypting log entries
* By providing real-time access to log data
* By managing email communication
* By routing network traffic Correct Answer: B

Q233. What are the basic components of an email message?

* Subject, recipient, and attachment
* Sender, message body, and attachment
* Encryption key, header, and footer
* DNS server, firewall, and router Correct Answer: B

Q234. What is the significance of email encryption in ensuring message confidentiality?

* It compresses email attachments
* It protects email contents from unauthorized access
* It manages email routing
* It provides secure email storage Correct Answer: B

Q235. What is the concept of email forwarding, and how is it used?

* It sends email to multiple recipients
* It redirects received emails to another address
* It encrypts email contents
* It optimizes email routing Correct Answer: B

Q236. What is spam email, and how do email providers combat spam?

* Unwanted email messages
* Encrypted email messages
* Email encryption keys
* Email server logs Correct Answer: A

Q237. What is FTP (File Transfer Protocol), and what is its primary purpose?

* A text encryption protocol
* A network protocol for transferring files
* A method of email delivery
* A data compression technique Correct Answer: B

Q238. What role do passive and active modes play in FTP connections?

* They manage FTP encryption keys
* They define how data connections are established
* They compress email headers
* They optimize email routing Correct Answer: B

Q239. What is FTPS, and how does it enhance FTP security?

* It encrypts FTP traffic
* It optimizes email delivery
* It manages email logs
* It encrypts email headers Correct Answer: A

Q240. What is the World Wide Web (WWW), and how does it function in modern communication?

* A system of encrypted emails
* A global network of interconnected web pages
* A method of email delivery
* A file storage protocol Correct Answer: B

Q241. How are web addresses (URLs) structured, and what do they represent?

* They use IP addresses for encryption
* They indicate the email server's location
* They specify web page content
* They define FTP server addresses Correct Answer: C

Q242. What is the significance of HTTP (Hypertext Transfer Protocol) in web communication?

* It encrypts email headers
* It facilitates the transfer of web page data
* It compresses email attachments
* It manages email logs Correct Answer: B

Q243. What is a URL (Uniform Resource Locator), and how does it relate to HTTP?

* It is an email attachment format
* It defines the structure of web pages
* It specifies web page addresses
* It encrypts email headers Correct Answer: C

Q244. How does caching work in HTTP, and what benefits does it offer in web browsing?

* It optimizes email delivery
* It improves web page loading times
* It encrypts email contents
* It manages email attachments Correct Answer: B

Q245. What is SMTP (Simple Mail Transfer Protocol), and what is its primary purpose?

* A protocol for secure email delivery
* A protocol for transferring files
* A protocol for web communication
* A method of email encryption Correct Answer: A

Q246. What are SMTP servers (MTAs), and how do they handle email routing and delivery?

* They are web servers for email storage
* They manage email logs
* They relay email messages
* They compress email headers Correct Answer: C

Q247. What are the SMTP port numbers (e.g., 25, 587), and how are they used in email transmission?

* They are email attachment formats
* They are used to encrypt email data
* They indicate email destinations
* They specify email server addresses Correct Answer: C

Q248. How does SNMP enable the monitoring and management of network devices and resources?

* It encrypts email contents
* It uses email attachments to control devices
* It retrieves and configures data
* It optimizes email routing Correct Answer: C

Q249. Explain the roles of SNMP traps and informs in network management and alerting.

* They are email headers for web pages
* Traps are unsolicited alerts, informs
* They are email headers for SNMP messages
* They encrypt email attachments Correct Answer: B

Q250. How does SNMP version 3 enhance security and authentication in network management compared to earlier versions?

* It encrypts SNMP messages
* It optimizes email delivery
* It uses email headers for authentication
* It compresses email headers Correct Answer: A

Q251. How does SNMP contribute to proactive network management and troubleshooting?

* It uses email encryption methods
* It provides real-time monitoring and alerts
* It compresses email attachments
* It optimizes email routing Correct Answer: B

Q252. What role do firewalls play in network security, and how do they filter network traffic?

* They ensure data confidentiality
* They optimize network performance
* They prevent unauthorized access
* They track network logs for errors Correct Answer: C

Q253. Explain the concept of incident response in network security and its importance in mitigating security breaches.

* It enhances user authentication
* It minimizes network performance impact
* It detects and responds to incidents
* It optimizes network routing Correct Answer: C

Q254. What is the primary goal of cryptography in network security?

* To minimize network performance impact
* To ensure data confidentiality
* To optimize network routing
* To restrict unauthorized access Correct Answer: B

Q255. Explain the difference between symmetric and asymmetric encryption, and when is each used in network security?

* Symmetric encryption uses one key
* Asymmetric encryption uses one key pair
* Symmetric encryption uses two keys
* Asymmetric encryption uses two keys Correct Answer: C

Q256. What is a cryptographic hash function, and how is it used in data integrity verification and password storage?

* It ensures data confidentiality
* It improves network performance
* It verifies data integrity
* It restricts unauthorized access Correct Answer: C

Q257. What are some common challenges in implementing cryptography in network security, and how can they be mitigated?

* Lack of encryption algorithms
* Key management issues
* Slow network performance
* Lack of user authentication Correct Answer: B

Q258. Explain the concept of a digital signature algorithm and how it works.

* It encrypts the entire message
* It verifies the sender's identity
* It creates a unique hash of the message
* It improves network performance Correct Answer: B

Q259. How does the recipient of a digitally signed message verify the signature's authenticity and integrity?

* By comparing it to a public key
* By decrypting the message using a private key
* By hashing the message and comparing hashes
* By optimizing network routing Correct Answer: B

Q260. What challenges can arise in implementing digital signatures, and how can they be mitigated for secure data transmission?

* Lack of key management practices
* Slow network performance
* Insufficient user authentication
* Inadequate encryption algorithms Correct Answer: A

Q261. What is the difference between TCP and UDP?

* They are two different versions of the same protocol.
* Both are connectionless protocols.
* TCP is connection-oriented and provides reliable data delivery, while UDP is connectionless and offers lower overhea
* TCP and UDP are the same and can be used interchangeably. Correct Answer: c

Q262. What is the primary purpose of the Stop and Wait protocol in data link layer communication?

* Minimize latency
* Maximize throughput
* Ensure error detection
* Achieve reliable data transfer Correct Answer: D

Q263. What does the receiver do upon successfully receiving a data frame in the Stop and Wait protocol?

* Sends a negative acknowledgment (NAK)
* Waits for the next data frame
* Sends an acknowledgment (ACK) to the sender
* Requests retransmission of the data frame Correct Answer: C

Q264. In the Stop and Wait protocol, what happens if the sender does not receive an acknowledgment (ACK) within a certain time frame?

* It continues sending data frames
* It sends a negative acknowledgment (NAK)
* It waits indefinitely for the ACK
* It retransmits the same data frame Correct Answer: D

Q265. In the Stop and Wait protocol, what is the purpose of sequence numbers attached to data frames?

* To identify the sender
* To ensure frame integrity
* To avoid duplicate frames
* To enable parallel transmission Correct Answer: C

Q266. What is the Stop and Wait protocol's impact on the effective data transmission rate compared to the overall channel capacity?

* It achieves 100% efficiency
* It achieves nearly 100% efficiency
* It achieves 50% efficiency
* It achieves less than 50% efficiency

Correct Answer: D

Q267. What is the main advantage of the Stop and Wait protocol in noiseless channels?

* Minimal latency
* High throughput
* Simple implementation
* Support for parallel transmission Correct Answer: C

Q268. In a noisy channel, what is the primary challenge that data link layer protocols like ARQ aim to address?

* Minimizing latency
* Ensuring error-free data transmission
* Maximizing throughput
* Reducing the number of frames transmitted Correct Answer: B

Q269. What action does the sender take in the Stop and Wait protocol upon receiving a negative acknowledgment (NAK) from the receiver?

* Resends the current frame
* Advances to the next frame
* Pauses transmission
* Requests retransmission of the frame Correct Answer: A

Q270. In Go-Back-N ARQ, if the receiver detects an error in a frame, what action is taken regarding subsequent frames in the window?

* All subsequent frames are discarded
* Only the erroneous frame is discarded
* All frames from the current frame onward are discarded
* The receiver continues accepting frames in the window Correct Answer: A

Q271. What happens if a frame is lost or corrupted in the Go-Back-N protocol, and the receiver acknowledges subsequent frames?

* The sender resends only the lost or corrupted frame
* All frames following the lost or corrupted frame are discarded
* The sender waits for a timeout and retransmits the entire window
* The receiver retransmits the acknowledgment Correct Answer: A

Q272. What characteristic of Selective Repeat ARQ allows it to recover from errors in any frame within the window without affecting the rest?

* Independent acknowledgment for each frame
* Sliding window approach
* Simplicity
* Reduced acknowledgment overhead Correct Answer: A

Q273. What is the primary function of the Network Layer in the OSI model?

* Ensuring error-free data transmission
* Packet forwarding and routing
* Data link establishment and management
* Session establishment and termination Correct Answer: B

Q274. What is the purpose of an IP address in computer networking?

* Identifying the location of a device
* Encrypting data for secure transmission
* Controlling access to the internet
* Determining the speed of data transmission Correct Answer: A

Q275. What does the subnet mask in an IPv4 address indicate?

* The host portion of the IP address
* The network portion of the IP address
* The number of available IP addresses
* The broadcast address of the network Correct Answer: B

Q276. What is the purpose of Network Address Translation (NAT) in IPv4?

* Encrypting data for secure transmission
* Converting private IP addresses to public addresses
* Determining the speed of data transmission
* Resolving domain names to IP addresses Correct Answer: B

Q277. What is the function of the default gateway in a network configuration?

* Assigning IP addresses to devices
* Providing access to external networks
* Filtering incoming network traffic
* Managing DNS resolution requests Correct Answer: B

Q278. In IPv4 addressing, what is the purpose of the subnetting process?

* Increasing the number of available IP addresses
* Improving network security by hiding IP addresses
* Grouping IP addresses by geographic location
* Enhancing the speed of data transmission Correct Answer: A

Q279. Which field in the IPv4 header is used to indicate the time-to-live (TTL) of a packet?

* Protocol
* Destination IP Address
* Source IP Address
* Time-to-Live (TTL) Correct Answer: D

Q280. In Distance Vector Routing (DVR), what is the primary drawback known as the "count-to- infinity" problem?

* Slow convergence
* Routing loops
* Limited scalability
* Inefficient bandwidth utilization Correct Answer: B

Q281. Which routing algorithm employs a "link state advertisement" (LSA) flooding mechanism to share routing information with all routers in a network?

* Distance Vector Routing (DVR)
* Link State Routing (LSR)
* Static Routing
* Default Routing (DR) Correct Answer: B

Q282. In Link State Routing (LSR), what information is included in the link state advertisement (LSA) packets?

* Routing tables and hop counts of neighboring routers
* Network topology and link status
* Encryption keys and access permissions
* IP addresses of all devices in the network Correct Answer: B

Q283. In the context of routing algorithms, what is the purpose of a routing table?

* To store information about the network topology
* To list all available IP addresses
* To determine the physical distance between routers
* To provide encryption for data in transit Correct Answer: A

Q284. Which routing algorithm is commonly used in interior routing within autonomous systems and relies on routers broadcasting routing tables to neighbors?

* Distance Vector Routing (DVR)
* Link State Routing (LSR)
* Static Routing
* Default Routing (DR) Correct Answer: A

Q285. What is the main function of IGMP (Internet Group Management Protocol) in network communications?

* Managing router access control lists (ACLs)
* Allowing devices to join or leave multicast groups
* Providing secure remote access
* Assigning unique IP addresses to devices within a network Correct Answer: B

Q286. Which of the following is a key advantage of IPv6 over IPv4?

* Longer addresses with fewer address bits
* More efficient header format
* Less security and encryption options
* Incompatibility with older networking equipment Correct Answer: B

Q287. How does IPv6 address the limitation of IPv4's address exhaustion issue?

* By increasing the length of IP addresses
* By reducing the number of devices per network
* By using NAT (Network Address Translation)
* By implementing IP address sharing between devices Correct Answer: A

Q288. Which transition mechanism facilitates the coexistence of IPv4 and IPv6 in a network by encapsulating IPv6 packets within IPv4 packets?

* Dual-stack
* Tunneling
* IPv6 over IPv4 (6over4)
* Network Address Translation (NAT) Correct Answer: B

Q289. Which of the following IPv6 address formats represents a loopback address used for testing on the local device?

* 2001:db8::/32
* ::1/128
* ff00::/8
* fe80::/10 Correct Answer: B

Q290. How many bits are reserved for the network portion in a Class A IP address?

* 8 bits
* 16 bits
* 24 bits
* 32 bits Correct Answer: A

Q291. What does subnetting allow network administrators to do?

* Assign multiple IP addresses to a single host
* Create smaller, more manageable networks
* Increase the size of the IP address pool
* Eliminate the need for routers in the network Correct Answer: B

Q292. In a subnetted network, what is the role of a broadcast address?

* To identify the default gateway for the network
* To represent all hosts within a subnet
* To forward data between subnets
* To encrypt data during transmission Correct Answer: B

Q293. What is the CIDR notation for a subnet mask of 255.255.255.240?

* /24
* /26
* /28
* /30

Correct Answer: C

Q294. Which routing algorithm is commonly used for finding the shortest path in a network?

* OSPF (Open Shortest Path First)
* RIP (Routing Information Protocol)
* BGP (Border Gateway Protocol)
* EIGRP (Enhanced Interior Gateway Routing Protocol) Correct Answer: A

Q295. What is the primary advantage of dynamic routing algorithms over static routing?

* Reduced administrative overhead
* Simplicity and ease of configuration
* High security due to manual updates
* Lower network scalability Correct Answer: A

Q296. Which routing algorithm calculates the shortest path based on the cumulative link costs?

* OSPF (Open Shortest Path First)
* RIP (Routing Information Protocol)
* BGP (Border Gateway Protocol)
* EIGRP (Enhanced Interior Gateway Routing Protocol) Correct Answer: A

Q297. Which dynamic routing protocol uses a distance-vector algorithm and broadcasts routing updates?

* OSPF (Open Shortest Path First)
* RIP (Routing Information Protocol)
* BGP (Border Gateway Protocol)
* EIGRP (Enhanced Interior Gateway Routing Protocol) Correct Answer: B

Q298. What is the primary disadvantage of static routing in a large and complex network?

* High computational overhead
* Difficulty in initial configuration
* Inability to adapt to network changes
* High resource utilization Correct Answer: C

Q299. Which version of RIP sends routing updates using broadcast messages?

* RIP v1
* RIP v2
* Both RIP v1 and v2
* Neither RIP v1 nor v2 Correct Answer: A

Q300. In RIP v2, what is the primary enhancement over RIP v1?

* Support for classless routing
* Faster convergence
* Compatibility with IPv6
* Increased hop count limit Correct Answer: A

Q301. What action does a RIP router take if it receives a route update with a higher metric than its own?

* It discards the route update
* It updates its routing table
* It compares the source IP address
* It sends an acknowledgment back to the sender Correct Answer: B

Q302. What is the administrative distance of RIP?

* 90
* 100
* 110
* 120

Correct Answer: C

Q303. In OSPF, what is an Autonomous System (AS)?

* A group of routers using OSPF
* A collection of routers
* A network with a single administrator
* A type of routing algorithm Correct Answer: C

Q304. Which OSPF area type connects to the backbone area (Area 0)?

* Stub area
* Backbone area
* Transit area
* Virtual link area Correct Answer: C

Q305. Which OSPF area is typically used to connect multiple OSPF areas together?

* Backbone area
* Transit area
* Stub area
* Virtual link area Correct Answer: A

Q306. OSPF uses a cost metric to determine the best path to a destination. What does this metric represent?

* Bandwidth
* Delay
* Hop count
* Reliability Correct Answer: A

Q307. What is OSPF's default administrative distance?

* 90
* 100
* 110
* 120

Correct Answer: A

Q308. EIGRP is a Cisco-proprietary routing protocol. What feature of EIGRP allows it to converge quickly after topology changes?

* DUAL (Diffusing Update Algorithm)
* Hello protocol
* Routing Information Protocol (RIP)
* Open Shortest Path First (OSPF) Correct Answer: A

Q309. What is the primary advantage of EIGRP over distance-vector routing protocols like RIP?

* Fast convergence
* Simplicity
* Compatibility with other routing protocols
* Support for large-scale networks Correct Answer: A

Q310. In EIGRP, what type of packets are used to establish and maintain neighbor adjacencies?

* Update packets
* Hello packets
* Query packets
* Acknowledgment packets Correct Answer: B

Q311. EIGRP supports both IPv4 and IPv6. Which protocol does EIGRP use for IPv4 routing?

* EIGRPv4
* EIGRP-NG (Next Generation)
* EIGRPv6
* EIGRP-IPv4 Correct Answer: A

Q312. What is the maximum hop count allowed in EIGRP for a valid route?

* 10 hops
* 15 hops
* 16 hops
* 100 hops Correct Answer: B

Q313. In BGP, what is the primary function of the Autonomous System (AS) number?

* To identify the router's manufacturer
* To specify the router's location
* To uniquely identify the router in the AS
* To determine the router's cost to reach a destination Correct Answer: C

Q314. What is the primary difference between iBGP and eBGP in BGP routing?

* iBGP is used within an AS, and eBGP is used between different ASes
* iBGP uses a simpler metric than eBGP
* eBGP is used for internal routing, while iBGP is used for external routing
* iBGP uses a different protocol stack than eBGP Correct Answer: A

Q315. What is the purpose of the BGP "path attribute"?

* To specify the AS path that a route has traversed
* To indicate the route's cost
* To determine the route's administrative distance
* To encrypt BGP routing updates Correct Answer: A

Q316. In BGP, what is a prefix or network prefix?

* The identifier of a BGP session
* A unique identifier for a router
* A summary of IP addresses within an AS
* A route to a destination network Correct Answer: D

Q317. BGP is commonly used at the edge of the Internet to exchange routing information between ISPs. What is this type of BGP deployment called?

* Core BGP
* Border BGP
* Edge BGP
* Intermediate BGP Correct Answer: B

Q318. Which BGP message type is used to establish and maintain BGP neighbor relationships?

* OPEN message
* UPDATE message
* KEEPALIVE message
* NOTIFICATION message Correct Answer: A

Q319. What is the primary benefit of BGP's path vector routing algorithm over distance-vector or link-state algorithms?

* Loop prevention
* Faster convergence
* Support for classless routing
* Simplicity Correct Answer: A

Q320. Which Transport Layer service allows multiple applications on the same device to share the network connection simultaneously?

* Segmentation
* Error correction
* Multiplexing
* Flow control Correct Answer: C

Q321. Which Transport Layer service is responsible for controlling the rate of data exchange between sender and receiver to prevent congestion?

* Segmentation
* Multiplexing
* Flow control
* Error correction Correct Answer: C

Q322. In the context of Transport Layer services, what is flow control?

* Controlling data flow between devices
* Ensuring error-free data transfer
* Multiplexing data streams
* Encrypting data for security Correct Answer: A

Q323. When using the Transport Layer, what is the purpose of error detection and correction?

* Ensuring timely delivery of data
* Providing end-to-end encryption
* Detecting and correcting errors
* Managing network resources Correct Answer: C

Q324. In a TCP connection, what role does the ACK (Acknowledgment) flag play during normal data transmission?

* It acknowledges successful data receipt
* It resets the connection
* It synchronizes sequence numbers
* It requests data retransmission Correct Answer: A

Q325. During the TCP three-way handshake, if the SYN-ACK segment sent by the server is lost or not received by the client, what happens?

* The client retransmits the SYN segment
* The server sends a RST segment
* The server initiates the connection termination
* The connection remains in an undefined state

Correct Answer: A

Q326. What is the purpose of Quality of Service (QoS) mechanisms in network communication?

* To ensure all traffic is treated equally
* To prioritize traffic based on its importance
* To reduce network latency and jitter
* To increase the network's physical capacity Correct Answer: B

Q327. What is the purpose of admission control in Quality of Service (QoS) management?

* To admit all incoming traffic
* To prioritize high-bandwidth applications
* To block all incoming traffic
* To ensure network resources are not overcommitted Correct Answer: D

Q328. How does DNS contribute to load balancing for websites with multiple servers?

* By encrypting user data
* By redirecting DNS queries to the closest server
* By assigning the same IP to all servers
* By managing email routing Correct Answer: B

Q329. What is the role of DNSSEC (DNS Security Extensions) in DNS?

* To encrypt DNS traffic
* To authenticate and secure DNS data
* To control DNS cache size
* To optimize email delivery Correct Answer: B

Q330. What is remote logging, and why is it important in network management?

* It's a type of encryption
* It allows monitoring of network events from a remote location
* It is a file storage protocol
* It manages email logs Correct Answer: B

Q331. What are some common challenges associated with remote logging in distributed environments?

* Inadequate encryption of logs
* Difficulty in accessing logs remotely
* Inefficient handling of email logs
* Limited log storage capacity Correct Answer: B

Q332. What is log rotation in the context of remote logging, and why is it important?

* A technique for encrypting logs
* A process of periodically archiving and replacing log files
* A method for prioritizing email logs
* A mechanism for load balancing Correct Answer: B

Q333. What is the syslog protocol, and how is it used for remote logging?

* A file storage protocol
* A network protocol for sending log messages
* An encryption method for logs
* A tool for managing email logs Correct Answer: B

Q334. How does remote logging facilitate troubleshooting network issues?

* By providing encryption keys
* By storing detailed logs of network events
* By optimizing email routing
* By securing log files Correct Answer: B

Q335. What is the significance of log correlation in remote logging analysis?

* It ensures email privacy
* It links related log entries to reveal a complete event
* It improves network performance
* It encrypts log data Correct Answer: B

Q336. How can remote logging be used to monitor user activity and access control?

* By monitoring email attachments
* By tracking logins and access patterns
* By encrypting log data
* By routing network traffic Correct Answer: B

Q337. Describe the role of log compression in optimizing remote log storage.

* It manages network bandwidth
* It reduces the size of log files for efficient storage
* It encrypts log entries
* It enhances email delivery Correct Answer: B

Q338. What is electronic mail (email), and how does it function in modern communication?

* A method of network encryption
* A system for sending text messages electronically
* A file storage protocol
* A communication method using digital envelopes Correct Answer: B

Q339. How does passive FTP differ from active FTP in terms of data transfer?

* Passive FTP uses email for transfers
* Active FTP requires manual intervention
* Passive FTP is slower
* Active FTP requires encryption Correct Answer: C

Q340. Explain the concept of FTP authentication.

* It encrypts file transfers
* It verifies the identity of users
* It compresses email attachments
* It optimizes email routing Correct Answer: B

Q341. What is anonymous FTP, and why is it used?

* An encryption method for FTP
* A type of FTP server for secure transfers
* FTP access without user authentication
* A method of email forwarding Correct Answer: C

Q342. How do FTP clients and FTP servers interact in a typical FTP session?

* Clients send email attachments
* Clients initiate file transfers to servers
* Servers send email logs
* Servers access user email folders Correct Answer: B

Q343. Who is credited with inventing the World Wide Web, and when was it first introduced?

* Bill Gates in 1995
* Tim Berners-Lee in 1989
* Ray Tomlinson in the 1970s
* Mark Zuckerberg in 2004 Correct Answer: B

Q344. What are web browsers, and how do they work?

* Software for encrypting emails
* Applications for accessing and displaying web pages
* Servers for email routing
* Devices for FTP file transfers Correct Answer: B

Q345. Explain the difference between a website and a web page.

* A website is a single web address
* A website is a collection of web pages
* A web page is an encrypted file
* A web page is a DNS server Correct Answer: B

Q346. What is the role of CSS (Cascading Style Sheets) in web design?

* To secure email attachments
* To define the layout and appearance of web pages
* To optimize email delivery
* To encrypt email data Correct Answer: B

Q347. How does JavaScript enhance web interactivity and functionality?

* It manages email routing
* It provides secure email access
* It allows dynamic web content
* It compresses email headers Correct Answer: C

Q348. What role does HTTP play in web browsing and accessing web pages?

* It encrypts email contents
* It manages email logs
* It facilitates web page retrieval
* It optimizes email routing Correct Answer: C

Q349. How does HTTP handle hyperlinks and navigation between web pages?

* It encrypts email headers
* It uses email attachments to navigate
* It uses hyperlinks and URLs
* It encrypts email data Correct Answer: C

Q350. Explain the concept of HTTP methods (GET, POST, PUT, DELETE, et) and their purposes.

* They are encryption algorithms for emails
* They define actions to perform on resources
* They manage email routing
* They compress email attachments Correct Answer: B

Q351. What is the significance of HTTP status codes (e.g., 200, 404, 500) in web communication?

* They manage email attachments
* They facilitate email encryption
* They indicate the outcome of requests
* They optimize email delivery Correct Answer: C

Q352. How does HTTPS (HTTP Secure) enhance web security compared to HTTP?

* It encrypts web page contents
* It optimizes email routing
* It manages email logs
* It uses email headers for navigation Correct Answer: A

Q353. What is SMTP authentication, and why is it important for email security?

* It encrypts email contents
* It verifies the identity of email clients
* It manages email headers
* It compresses email attachments Correct Answer: B

Q354. What is the purpose of SMTP relaying, and how does it work in email routing?

* It optimizes email delivery
* It forwards email messages
* It compresses email attachments
* It manages email logs Correct Answer: B

Q355. How does SMTP handle email attachments, and what formats are commonly used for email attachments?

* It optimizes email routing
* It encrypts email data
* It uses various formats for attachments
* It manages email logs Correct Answer: C

Q356. What are some common security challenges and solutions in SMTP email communication?

* Lack of email encryption
* Spam filtering and email authentication
* Excessive email attachment sizes
* Slow email delivery due to encryption Correct Answer: B

Q357. What is SNMP (Simple Network Management Protocol), and what is its primary purpose?

* A protocol for secure email delivery
* A protocol for managing network devices
* A protocol for web communication
* A method of email encryption Correct Answer: B

Q358. What are some common use cases for SNMP in network management, and how does it benefit IT professionals?

* Lack of email encryption
* Network monitoring, device configuration
* Excessive email attachment sizes
* Slow email delivery due to encryption Correct Answer: B

Q359. What are the primary goals of network security services?

* Ensuring data confidentiality
* Minimizing network performance impact
* Reducing device costs
* Enhancing user authentication Correct Answer: A

Q360. Which network security service is responsible for verifying the identity of users and devices?

* Data integrity
* Authentication
* Data encryption
* Intrusion detection systems (IDS) Correct Answer: B

Q361. How does access control contribute to network security, and what types of access control are commonly used?

* It optimizes network routing
* It restricts unauthorized access
* It encrypts network traffic
* It compresses network logs Correct Answer: B

Q362. What is the role of intrusion detection and prevention systems (IDS/IPS) in network security?

* They ensure data confidentiality
* They verify user identities
* They detect and respond to threats
* They optimize network performance Correct Answer: C

Q363. How does network monitoring enhance security services, and what are some common tools used for monitoring?

* It improves user authentication
* It detects security incidents
* It encrypts network logs
* It minimizes network performance impact Correct Answer: B

Q364. What is the significance of security policy enforcement in network security, and how is it implemented?

* It optimizes network routing
* It verifies user identities
* It restricts unauthorized access
* It ensures compliance with security policies Correct Answer: D

Q365. How do cryptographic keys enhance the security of encrypted data, and what key management practices are important?

* Keys improve user authentication
* Keys are used to encrypt network traffic
* Keys verify the sender's identity
* Keys are stored securely Correct Answer: B

Q366. What is the concept of a digital certificate, and how does it relate to public key infrastructure (PKI) in network security?

* Certificates improve user authentication
* Certificates encrypt network traffic
* Certificates verify data integrity
* Certificates optimize network routing Correct Answer: A

Q367. What is the purpose of secure sockets layer (SSL) and transport layer security (TLS) protocols in network encryption?

* They ensure data confidentiality
* They restrict unauthorized access
* They optimize network performance
* They verify user identities Correct Answer: A

Q368. What is the significance of a digital certificate in the context of digital signatures?

* It encrypts network traffic
* It verifies the sender's identity
* It optimizes network performance
* It restricts unauthorized access Correct Answer: B

Q369. What is the difference between a digital signature and a digital certificate in network security?

* Digital signatures verify sender authenticity
* Digital certificates verify data integrity
* Digital signatures use symmetric keys
* Digital certificates encrypt network traffic Correct Answer: A

Q370. How does a timestamp enhance the security of a digital signature?

* It improves user authentication
* It restricts unauthorized access
* It verifies the message's creation time
* It optimizes network routing Correct Answer: C

Q371. What is the purpose of the Certificate Authority (CA) in digital signature validation, and how does it work?

* To encrypt the message
* To verify user identities
* To issue and manage digital certificates
* To optimize network performance Correct Answer: C

Q372. In the TCP header, what field is used to specify the maximum segment size that a sender can handle?

* Acknowledgment Number
* Sequence Number
* Window Size
* Maximum Segment Size (MSS) Correct Answer: D

Q373. Which field in the UDP header is optional and used for error checking when set to a non-zero value?

* Source Port
* Checksum
* Destination Port
* Length Correct Answer: B

Q374. What is the purpose of the Urgent Pointer field in the TCP header?

* It specifies the source port number.
* It indicates the length of the header and dat
* It points to the urgent data in the TCP segment.
* It identifies the destination IP address. Correct Answer: C

Q375. Which field in the TCP header is used to acknowledge the receipt of data and indicate the next expected sequence number?

* Sequence Number
* Acknowledgment Number
* Window Size
* Urgent Pointer Correct Answer: B

Q376. In the UDP header, what is the purpose of the Length field?

* It stores the source port number.
* It specifies the acknowledgment number.
* It indicates the length of the UDP header and dat
* It identifies the destination IP address. Correct Answer: C

Q377. What is the primary goal of congestion control in network communication?

* To maximize network throughput at all times.
* To minimize latency for all network traffi
* To maintain network stability and prevent congestion.
* To prioritize certain types of traffic over others. Correct Answer: C

Q378. Which QoS technique allows network administrators to assign different priority levels to different types of network traffic?

* Traffic Shaping
* Traffic Policing
* Traffic Classification
* Traffic Engineering Correct Answer: C

Q379. Which congestion control mechanism in TCP reduces the sender's transmission rate when congestion is detected?

* Slow Start
* Congestion Avoidance
* Fast Retransmit
* Selective Acknowledgment Correct Answer: B

Q380. What is the primary purpose of Quality of Service (QoS) in networking?

* To provide network security and encryption.
* To minimize network latency and jitter.
* To manage and prioritize network traffi
* To determine the physical layout of network components. Correct Answer: C

Q381. Which QoS parameter measures the variation in packet arrival times in a network?

* Latency
* Throughput
* Jitter
* Bandwidth Correct Answer: C

Q382. Which Application Layer protocol is primarily responsible for translating human-readable domain names into IP addresses?

* HTTP
* DNS
* SMTP
* POP3 Correct Answer: B

Q383. What is the primary purpose of the FTP (File Transfer Protocol) in the Application Layer?

* Transferring files between client and server
* Resolving domain names to IP addresses
* Sending and receiving email messages
* Remote login and command execution Correct Answer: A

Q384. Which protocol is used for retrieving email messages from a mail server to a client device, allowing users to read their emails?

* SMTP
* HTTP
* POP3
* DNS Correct Answer: C

Q385. Which Application Layer protocol is responsible for the delivery of web pages from web servers to web browsers?

* SMTP
* FTP
* HTTP
* Telnet Correct Answer: C

Q386. What is the primary purpose of the IMAP (Internet Message Access Protocol) in the Application Layer?

* To transfer files between clients and servers
* To retrieve email messages from a server while keeping them on the server
* To resolve domain names to IP addresses
* To secure web communication Correct Answer: B

Q387. Which Application Layer protocol is commonly used for remote login and terminal emulation on remote systems?

* SMTP
* Telnet
* FTP
* POP3 Correct Answer: B

Q388. What does the SNMP (Simple Network Management Protocol) in the Application Layer primarily enable?

* File transfers between devices on a network
* Secure web communication
* Management and monitoring of network devices
* Real-time communication, including voice and video calls Correct Answer: C

Q389. Which Application Layer protocol is used for the exchange of email messages between mail servers?

* SMTP
* HTTP
* SIP
* SNMP Correct Answer: A

Q390. What is the primary function of the SSH (Secure Shell) protocol in the Application Layer?

* File transfer between client and server
* Email communication
* Secure remote login and command execution
* Resolving domain names to IP addresses Correct Answer: C

Q391. Which Application Layer protocol is used for the retrieval and management of directory information in a network?

* LDAP (Lightweight Directory Access Protocol)
* HTTP
* SIP
* SNMP Correct Answer: A

Q392. Which security service ensures that data is not altered during transmission and can be relied upon as genuine?

* Authentication
* Integrity
* Confidentiality
* Availability Correct Answer: B

Q393. Which cryptographic key is used for encrypting data in symmetric-key cryptography?

* Public Key
* Private Key
* Session Key
* Digital Signature Correct Answer: C

Q394. Which cryptographic technique involves the use of a pair of keys, one for encryption and one for decryption, and is commonly used in asymmetric encryption?

* Hashing
* Digital Signatures
* Public Key Cryptography
* Symmetric Key Cryptography

Correct Answer: C

Q395. What security service ensures that only authorized users or systems have access to data and network resources?

* Confidentiality
* Data Integrity
* Authentication
* Non-repudiation Correct Answer: C

Q396. What is the maximum number of bytes in the TCP header

* 16 bytes
* 20 bytes
* 24 bytes
* 28 bytes Correct Answer: B

Q397. Which field in the TCP header is used for flow control and specifies the number of bytes the sender can transmit before receiving an acknowledgment?

* Acknowledgment Number
* Sequence Number
* Window Size
* Urgent Pointer Correct Answer: C

Q398. In the UDP header, what is the purpose of the Checksum field?

* It stores the source port number.
* It provides error-checking for the entire UDP datagram.
* It indicates the length of the UDP header and dat
* It identifies the destination IP address. Correct Answer: B

Q399. Which field in the TCP header is used to ensure the integrity of the header and data?

* Source Port
* Checksum
* Acknowledgment Number
* Urgent Pointer Correct Answer: B

Q400. What is the purpose of the Sequence Number field in the TCP header?

* It identifies the source port.
* It specifies the acknowledgment number.
* It provides error-checking for the header and dat
* It helps in reordering and reassembling segments at the receiver. Correct Answer: D

Q401. What is the primary goal of congestion control in computer networking?

* To maximize network throughput at all times.
* To minimize the delay and latency in the network.
* To prevent network congestion and maintain network stability.
* To prioritize certain types of traffic over others. Correct Answer: C

Q402. Which congestion control algorithm is commonly used in TCP to detect and respond to network congestion?

* Leaky Bucket
* Token Bucket
* Slow Start
* Quality of Service (QoS) Correct Answer: C

Q403. What is Quality of Service (QoS) in networking?

* A protocol used for routing data packets.
* A technique for compressing data to reduce congestion.
* A set of techniques and mechanisms to manage and prioritize network traffi
* A method for error checking and correction in data transmission. Correct Answer: C

Q404. In QoS, what does the term "Traffic Shaping" refer to?

* The process of detecting and reacting to network congestion.
* The process of allocating bandwidth to different types of traffi
* The process of controlling the flow of traffic to conform to a specified profile.
* The process of encrypting network traffic for security. Correct Answer: C

Q405. Which of the following is NOT a commonly used QoS parameter for traffic classification and prioritization?

* Delay
* Packet Size
* Throughput
* Jitter Correct Answer: B

Q406. Which layer of the OSI model is responsible for providing network services directly to end- users or applications?

* Physical Layer
* Data Link Layer
* Transport Layer
* Application LAyer Correct Answer: D

Q407. What is the primary function of the Application Layer in the OSI model?

* Data encapsulation and framing
* Error detection and correction
* User interface and data access
* Routing and path determination Correct Answer: C

Q408. Which protocol is commonly used for sending and receiving email messages over the Internet?

* SMTP
* HTTP
* FTP
* DNS Correct Answer: A

Q409. What is the primary purpose of the HTTP protocol?

* File transfer
* Email communication
* Web page retrieval
* Remote login Correct Answer: C

Q410. Which protocol is used for secure data transmission over the web, ensuring confidentiality and data integrity?

* HTTP
* FTP
* SMTP
* HTTPS Correct Answer: D

Q411. Which Application Layer protocol is used for transferring files between a client and a server over a network?

* SMTP
* Telnet
* FTP
* POP3 Correct Answer: C

Q412. Which Application Layer protocol is commonly used for remote login and command execution on remote servers?

* HTTP
* Telnet
* SMTP
* FTP Correct Answer: B

Q413. What is the primary purpose of the DNS (Domain Name System) protocol in the Application Layer?

* Transferring files between clients and servers
* Resolving human-readable domain names to IP addresses
* Sending and receiving email messages
* Secure web communication Correct Answer: B

Q414. Which Application Layer protocol is responsible for the retrieval of email messages from a mail server to a client device?

* FTP
* HTTP
* POP3
* IMAP Correct Answer: C

Q415. Which Application Layer protocol is used for real-time communication, including voice and video calls, over the Internet?

* SMTP
* HTTP
* SIP
* SNMP Correct Answer: C

Q416. Which network security service ensures that data is not disclosed to unauthorized users?

* Authentication
* Integrity
* Confidentiality
* Availability Correct Answer: C

Q417. What is the primary purpose of cryptography in network security?

* To prevent unauthorized access to a network
* To protect data from being altered during transmission
* To authenticate users and devices
* To detect and respond to network intrusions Correct Answer: B

Q418. Which cryptographic key is used for both encryption and decryption in symmetric-key cryptography?

* Public Key
* Private Key
* Session Key
* Digital Signature Correct Answer: C

Q419. What is a digital signature primarily used for in network security?

* Encrypting data for secure transmission
* Verifying the identity of the sender and ensuring data integrity
* Protecting data from unauthorized access
* Scanning for malware and viruses Correct Answer: B

Q420. Which cryptographic technique involves the use of two keys, one for encryption and one for decryption, and is commonly used in asymmetric encryption?

* Hashing
* Digital Signatures
* Public Key Cryptography
* Symmetric Key Cryptography Correct Answer: C

Q421. Which field in the IP header is used for ensuring the integrity of the packet during transmission?

* DES (Data Encryption Standard)
* AES (Advanced Encryption Standard)
* RSA (Rivest-Shamir-Adleman)
* MD5 (Message Digest 5) Correct Answer: C

Q422. In DNS, what is the purpose of a CNAME (Canonical Name) record?

* To map an alias or nickname to a canonical (true) domain name
* To specify the mail server responsible for receiving email messages
* To indicate the authoritative DNS server for a domain
* To define the start of a zone of authority in the DNS hierarchy Correct Answer: A

Q423. In email terminology, what is a "mail relay" or "SMTP relay"?

* A system that automatically sends email responses
* An email client application
* A mail server that forwards email messages to their destinations
* A type of email attachment

Correct Answer: C

Q424. In HTTP, what is the purpose of the "Referer" header field in an HTTP request?

* To specify the URL of the current web page
* To indicate the encoding used for the request body
* To identify the previous web page from which the request was initiated
* To define the content type of the response Correct Answer: C

Q425. In SMTP, what role does the "MX record" play in the email delivery process?

* It specifies the sender's email address
* It defines the email server's IP address
* It identifies the recipient's mail server for a given domain
* It indicates the type of encryption used for email transmission Correct Answer: C

Q426. In SNMP, what does the term "OID" (Object Identifier) refer to?

* A network device's IP address
* A unique identifier for a managed object in the MIB
* The SNMP version number used for communication
* A specific SNMP security credential Correct Answer: B

Q427. In the context of network security, what does the term "access control" refer to?

* Controlling the physical access to network devices
* Controlling user privileges and permissions to network resources
* Monitoring network traffic for suspicious activities
* Encrypting sensitive data during transmission Correct Answer: B

Q428. In the context of network security, what is the primary purpose of an Intrusion Prevention System (IPS)?

* To monitor network traffic for security incidents
* To identify and respond to security incidents
* To prevent security incidents from occurring
* To encrypt data for secure transmission

Correct Answer: C

Q429. What does Quality of Service (QoS) in computer networks refer to?

* The speed of data transmission in a network
* The reliability of network connections
* The ability to prioritize and control network traffic to meet specific service requirements
* The physical security of network infrastructure Correct Answer: C

Q430. What does the term "digital signature" refer to in cryptography?

* A code that hides the original message
* A method for encrypting data
* A unique identifier for a network device
* A cryptographic technique to verify the authenticity and integrity of a message Correct Answer: D

Q431. What is the primary benefit of centralizing log management through remote logging?

* It reduces the need for network security measures.
* It simplifies log analysis and troubleshooting.
* It eliminates the need for network monitoring.
* It increases network performance. Correct Answer: B

Q432. What is the primary purpose of an email "alias" or "nickname"?

* To specify the email recipient's location on the internet
* To provide an alternative email address for the same recipient
* To categorize emails into folders
* To indicate the importance level of an email Correct Answer: B

Q433. What is the primary purpose of HTTP in computer networks?

* To transfer files between a client and a server
* To exchange emails and messages
* To browse websites and retrieve web pages
* To manage network security Correct Answer: C

Q434. What is the primary purpose of S/MIME (Secure/Multipurpose Internet Mail Extensions) in email communication?

* To filter spam emails
* To provide end-to-end encryption and digital signatures for email messages
* To compress email attachments
* To improve email server performance Correct Answer: B

Q435. What is the primary role of SMTP in computer networks?

* To transfer files between client and server
* To manage network security
* To exchange email messages between clients and servers
* To browse websites and retrieve web pages Correct Answer: C

Q436. What is the purpose of a web browser's "cookie" in the context of the World Wide Web?

* To store passwords for websites
* To encrypt web traffic
* To remember user preferences and track user sessions
* To block unwanted advertisements Correct Answer: C

Q437. What is the purpose of the "Cache-Control" header field in HTTP responses?

* To specify the maximum file size for caching
* To indicate whether the response can be cached and for how long
* To request the server to send a compressed response
* To define the character encoding for the response content Correct Answer: B

Q438. Faster data transmission

* To specify the character encoding of the response content
* To indicate whether the response is compressed
* To define the maximum file size for caching
* To identify the type of content being sent Correct Answer: D

Q439. What is the purpose of the HTML (Hypertext Markup Language) in the World Wide Web?

* To encrypt web pages for security
* To define the structure and content of web pages
* To manage domain name registrations
* To establish secure connections between web servers Correct Answer: B

Q440. What is the role of a firewall in network security?

* To encrypt data for secure transmission
* To prevent unauthorized access to a network by filtering incoming and outgoing traffic
* To detect and respond to security incidents
* To provide real-time monitoring of network traffic Correct Answer: B

Q441. Which cryptographic protocol is commonly used for securing web traffic by encrypting data between a web browser and a web server?

* SNMP (Simple Network Management Protocol)
* SSL/TLS (Secure Sockets Layer/Transport Layer Security)
* SMTP (Simple Mail Transfer Protocol)
* HTTP (Hypertext Transfer Protocol) Correct Answer: B

Q442. Which email authentication mechanism helps prevent email spoofing and phishing by verifying the sender's domain in the email headers?

* SMTPS (SMTP Secure)
* SPF (Sender Policy Framework)
* POP3S (POP3 Secure)
* DMARC (Domain-based Message Authentication, Reporting, and Conformance) Correct Answer: B

Q443. Which protocol is commonly used for remote logging in Unix and Linux systems?

* RDP (Remote Desktop Protocol)
* SSH (Secure Shell)
* SNMP (Simple Network Management Protocol)
* Syslog

Correct Answer: D

Q444. Which QoS approach involves reserving network resources in advance to guarantee a certain level of service for specific traffic flows?

* Integrated Services (IntServ)
* Differentiated Services (DiffServ)
* Best-Effort Service
* Flow-Based QoS Correct Answer: A

Q445. Which type of attack in cryptography involves attempting every possible key until the correct one is found?

* Brute-force attack
* Man-in-the-middle attack
* Denial-of-Service (DoS) attack
* Phishing attack Correct Answer: A

Q446. Which of the following is a connection-oriented protocol?

* TCP
* UDP
* ICMP
* ARP Correct Answer: A

Q447. Which of the following fields is present in the TCP header but not in the UDP header?

* Sequence number
* Acknowledgement number
* Both sequence number and acknowledgement number
* None of the above Correct Answer: C

Q448. What are the two main types of congestion control algorithms?

* Open-loop
* Closed-loop
* Both open-loop and closed-loop
* None of the above Correct Answer: C

Q449. Which of the following is an example of a closed-loop congestion control algorithm?

* TCP slow start
* TCP congestion avoidance
* TCP fast recovery
* All of the above Correct Answer: D

Q450. Which of the following is an example of an open-loop congestion control algorithm?

* Random early detection (RED)
* Weighted fair queuing (WFQ)
* TCP congestion avoidance
* None of the above Correct Answer: A

Q451. What is the Domain Name System (DNS) used for?

* To translate domain names into IP addresses
* To provide a directory service for email servers
* To provide a way to log into remote systems
* All of the above Correct Answer: D

Q452. What is the Simple Mail Transfer Protocol (SMTP) used for?

* To send email messages
* To receive email messages
* To store email messages
* All of the above Correct Answer: C

Q453. What is the Post Office Protocol (POP3) used for?

* To receive email messages
* To store email messages
* To send email messages
* None of the above

Correct Answer: A

Q454. What is the Internet Mail Access Protocol (IMAP) used for?

* To access email messages that are stored on a remote server
* To send email messages
* To receive email messages
* None of the above Correct Answer: A

Q455. Which of the following protocols is used for remote logging?

* SSH
* Telnet
* Both SSH and Telnet
* None of the above Correct Answer: C

Q456. What is FTP used for?

* To transfer files between computers
* To browse the web
* To send email
* None of the above Correct Answer: A

Q457. What is the WWW used for?

* To browse the web
* To transfer files between computers
* To send email
* None of the above Correct Answer: A

Q458. What is the difference between FTP and the WWW?

* FTP is used to transfer files between computers, while the WWW is used to browse the we
* FTP is a file transfer protocol, while the WWW is a hypertext transfer protocol.
* FTP uses TCP, while the WWW uses HTTP.
* All of the above

Correct Answer: D

Q459. Which of the following protocols is used by email servers?

* SMTP
* HTTP
* SNMP
* None of the above Correct Answer: A

Q460. Which of the following protocols is used to monitor network devices?

* SNMP
* HTTP
* SMTP
* None of the above Correct Answer: A

Q461. What is the main goal of network security?

* To protect networks and their data from unauthorized access, use, disclosure, disruption, modification, or destruction.
* To improve the performance of networks.
* To reduce the cost of network operations.
* All of the above. Correct Answer: D

Q462. What are the five main security services?

* Confidentiality, integrity, authentication, non-repudiation, and access control.
* Confidentiality, integrity, and availability.
* Confidentiality, integrity, and authentication.
* Confidentiality and integrity. Correct Answer: A

Q463. What are the two main types of cryptography?

* Symmetric-key cryptography and asymmetric-key cryptography.
* Public key cryptography and private key cryptography.
* Strong cryptography and weak cryptography.
* None of the above.

Correct Answer: A

Q464. What is the difference between symmetric-key cryptography and asymmetric-key cryptography?

* Symmetric-key cryptography uses the same key to encrypt and decrypt data, while asymmetric-key cryptography uses two different keys: a public key and a private key.
* Public key cryptography is more secure than symmetric-key cryptography.
* Symmetric-key cryptography is faster than asymmetric-key cryptography.
* All of the above. Correct Answer: D

Q465. Which of the following are examples of digital signature algorithms?

* RSA, DSA, and ECDSA
* AES, DES, and 3DES
* SHA-1, SHA-2, and MD5
* None of the above Correct Answer: A

Q466. What are the benefits of using digital signatures?

* Digital signatures can help to protect against data tampering, forgery, and impersonation.
* Digital signatures can help to improve the efficiency of electronic transactions.
* Digital signatures can help to reduce the cost of doing business electronically.
* All of the above. Correct Answer: D

Q467. In a connection-oriented protocol, what is the purpose of the "Three-Way Handshake" process?

* To establish a reliable connection before data transmission
* To exchange routing information with neighboring routers
* To ensure the confidentiality of data being transmitted
* To negotiate the encryption settings for the communication Correct Answer: A

Q468. Which protocol is an example of a connection-oriented protocol used for secure data transmission over the internet?

* HTTP (Hypertext Transfer Protocol)
* FTP (File Transfer Protocol)
* UDP (User Datagram Protocol)
* TLS (Transport Layer Security) Correct Answer: D

Q469. What is the primary benefit of a connectionless protocol's approach to data transmission?

* Guaranteed delivery of data packets
* Minimal delay due to lack of connection establishment
* Reliable delivery and error correction mechanisms
* Improved congestion control mechanisms Correct Answer: B

Q470. In a connectionless protocol, how are data packets delivered to the destination?

* With guaranteed delivery and sequencing
* Without any addressing information
* Using virtual circuit switching
* Individually, without establishing a formal connection Correct Answer: D

Q471. In the TCP header, which field indicates the length of the TCP header and any optional data that follows it?

* Sequence Number
* Acknowledgment Number
* Header Length
* Window Size Correct Answer: C

Q472. What does the term "Sequence Number" refer to in the context of TCP communication?

* The position of a packet in the transmission order
* The number of packets in the sender's queue
* The maximum amount of data a receiver can handle
* The checksum value calculated for the data Correct Answer: A

Q473. In the TCP/UDP message format, what is the purpose of the "Source Port" field?

* Identifies the application layer protocol being used
* Identifies the port number of the sender's device
* Specifies the destination port of the receiver
* Provides information about the type of data being transmitted Correct Answer: B

Q474. Which network security protocol provides secure communication over the web by encrypting data between a web browser and a web server?

* SSH (Secure Shell)
* HTTPS (Hypertext Transfer Protocol Secure)
* SNMP (Simple Network Management Protocol)
* FTP (File Transfer Protocol) Correct Answer: B

Q475. Which cryptographic technique is used to verify the integrity and authenticity of a message by generating a fixed-length hash?

* Digital signature
* Symmetric encryption
* Asymmetric encryption
* Hashing Correct Answer: D

Q476. What is the primary purpose of a firewall in network security?

* To encrypt data transmissions
* To authenticate users
* To protect against unauthorized access and threats
* To load balance network traffic Correct Answer: C

Q477. Which key is used for encryption in asymmetric encryption?

* Private key
* Secret key
* Public key
* Symmetric key Correct Answer: C

Q478. Which security service ensures that data is not disclosed to unauthorized users?

* Authentication
* Data Integrity
* Confidentiality
* Availability Correct Answer: C

Q479. Which FTP mode allows for data to flow in both directions but not simultaneously, with the client initiating the data connection?

* Active mode
* Passive mode
* Extended Passive mode
* Passive-active mode Correct Answer: A

Q480. SNMP is primarily used for:

* Transferring files between computers.
* Managing and monitoring network devices.
* Browsing the World Wide We
* Sending emails securely. Correct Answer: B

Q481. Which HTTP method is idempotent, meaning that making multiple identical requests will produce the same result as a single request?

* GET
* POST
* PUT
* DELETE Correct Answer: A

Q482. Which HTTP status code indicates a successful request, and the server has fulfilled it?

* 200 OK
* 302 Found
* 404 Not Found
* 500 Internal Server Error Correct Answer: A

Q483. In FTP, which mode is used for transferring files where data flows independently of control and may be sent on separate connections?

* Active mode
* Passive mode
* Extended Passive mode
* Stream mode Correct Answer: B

Q484. What is the primary function of the SNMP Trap message?

* To request information from the SNMP agent.
* To acknowledge the receipt of SNMP messages.
* To inform the SNMP manager of significant events or alarms.
* To encrypt SNMP data for security. Correct Answer: C

Q485. In HTTP, which request method is typically used to make changes to the server's state or create new resources?

* GET
* POST
* PUT
* HEAD Correct Answer: C

Q486. Which of the following is NOT a primary security service provided by network security protocols?

* Authentication
* Access Control
* Data Integrity
* Load Balancing Correct Answer: D

Q487. Which cryptographic algorithm is widely used for securing email communications?

* RSA
* AES
* SHA-256
* HMAC Correct Answer: A

Q488. Which DiffServ (Differentiated Services) field in an IP header is used to specify the priority level of a packet?

* TOS (Type of Service) field
* TTL (Time-to-Live) field
* Payload Length field
* Identification field Correct Answer: A

Q489. What does the term "Traffic Policing" refer to in QoS?

* Prioritizing high-priority traffic over low-priority traffic
* Controlling traffic by dropping excess packets
* Measuring network bandwidth
* Encrypting all network traffic Correct Answer: B

Q490. In a network with QoS, what does the term "DSCP" stand for?

* Delayed Service Control Packet
* Data Sequence Control Protocol
* Differentiated Services Code Point
* Dynamic Source and Channel Protocol Correct Answer: C

Q491. Identify the field that is NOT present in the TCP header

* Sequence number
* Source port number
* Destination port number
* Time to live (TTL) Correct Answer: D

Q492. Identify the connectionless protocol

* TCP
* UDP
* Both TCP and UDP
* Neither TCP nor UDP Correct Answer: B

Q493. Identify the congestion control mechanism that is NOT used by TCP

* Slow start
* Congestion avoidance
* Fast recovery
* Forward error correction (FEC) Correct Answer: D

Q494. Identify the algorithm that is used by TCP to avoid congestion

* Additive increase, multiplicative decrease
* Round robin
* Weighted fair queuing
* None of the above Correct Answer: A

Q495. Identify the QoS parameter that is used to measure the delay of a packet

* Latency
* Jitter
* Packet loss rate
* Bandwidth Correct Answer: A

Q496. Identify the type of DNS record that is NOT valid

* A record
* CNAME record
* MX record
* ARP record Correct Answer: D

Q497. Identify the protocol that is used for remote logging

* Syslog
* SNMP
* Both Syslog and SNMP
* Neither Syslog nor SNMP Correct Answer: A

Q498. Identify the component of an email message that is NOT mandatory

* Message header
* Message body
* Message envelope
* Message signature Correct Answer: D

Q499. Identify the protocol that is used to transfer files over a network

* FTP
* HTTP
* Both FTP and HTTP
* Neither FTP nor HTTP Correct Answer: A

Q500. Identify the protocol that is used to access web pages

* FTP
* HTTP
* Both FTP and HTTP
* Neither FTP nor HTTP Correct Answer: B

Q501. Which of the following is NOT a benefit of using additive increase, multiplicative decrease (AIMD) for congestion control?

* It is efficient in avoiding congestion.
* It is fair to all flows.
* It is simple to implement.
* It is robust to changes in network conditions. Correct Answer: B

Q502. Which of the following QoS mechanisms can be used to guarantee bandwidth to a particular flow?

* Token bucket
* Leaky bucket
* Weighted fair queuing
* All of the above Correct Answer: D

Q503. Which of the following DNS records is used to map a domain name to an IP address?

* A record
* CNAME record
* MX record
* NS record Correct Answer: A

Q504. Which of the following is NOT a type of firewall?

* Packet filtering firewall
* Stateful inspection firewall
* Application-level firewall
* Proxy firewall Correct Answer: C

Q505. Which of the following routing algorithms is used to find the shortest path between two nodes in a network?

* Dijkstra's algorithm
* Bellman-Ford algorithm
* Link state routing
* Distance vector routing Correct Answer: A

Q506. Which of the following is NOT a disadvantage of UDP?

* It is unreliable.
* It is connectionless.
* It is inefficient for large data transfers.
* It is complex to implement. Correct Answer: D

Q507. Which of the following factors can affect the performance of TCP congestion control?

* The size of the network
* The type of traffic
* The bandwidth of the links
* All of the above Correct Answer: D

Q508. Which of the following QoS mechanisms can be used to reduce jitter?

* Packet buffering
* Traffic shaping
* Priority queuing
* All of the above Correct Answer: D

Q509. Which of the following DNS records is used to map a domain name to a mail server?

* A record
* CNAME record
* MX record
* NS record Correct Answer: C

Q510. Which of the following security threats can be mitigated by using a firewall?

* Denial-of-service attacks
* Man-in-the-middle attacks
* Malware infections
* All of the above Correct Answer: D

Q511. Which of the following routing protocols is used in the Internet?

* Open Shortest Path First (OSPF)
* Border Gateway Protocol (BGP)
* Routing Information Protocol (RIP)
* All of the above Correct Answer: D

Q512. Which of the following wireless networking standards is used for high-speed data transfers?

* 802.11a
* 802.11b
* 802.11g
* 802.11n

Correct Answer: D

Q513. Which of the following tools can be used to measure network performance?

* Ping
* Traceroute
* Wireshark
* All of the above Correct Answer: D

Q514. Which of the following troubleshooting steps can be used to resolve a connectivity issue?

* Check the cables
* Restart the devices
* Update the firmware
* All of the above Correct Answer: D

Q515. Which of the following factors should be considered when designing a network?

* The size of the network
* The type of traffic
* The budget
* All of the above Correct Answer: D