

In the layered approach to Internet software, what is the primary responsibility of the application layer?

- A. Formatting messages for transmission
- B. Translating mnemonic addresses to IP addresses
- C. Dividing long messages into segments
- D. Sending and receiving messages over the Internet

Answer: D

How does the transport layer ensure the proper transmission of messages over the Internet?

- A. By translating human-readable addresses into IP addresses
- B. By dividing messages into small segments
- C. By adding sequence numbers to message segments
- D. By routing packets to their final destinations

Answer: C

What is the primary role of the network layer in Internet communication?

- A. Dividing messages into segments
- B. Adding sequence numbers to message segments
- C. Deciding the direction of packet forwarding
- D. Transmitting individual packets

Answer: C

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How does the link layer contribute to the transmission of packets in the Internet?

- A. By routing packets to their final destinations
- B. By adding sequence numbers to message segments
- C. By dealing with communication details specific to the network
- D. By extracting message segments from packets

Answer: C

What is the purpose of assigning unique port numbers in Internet communication?

- A. To translate mnemonic addresses to IP addresses
- B. To divide long messages into segments
- C. To determine the direction of packet forwarding
- D. To specify which unit within the application layer should receive a message

Answer: D

Which protocol is commonly used for DNS lookups and VoIP due to its efficiency?

- A. SMTP
- B. HTTP
- C. UDP
- D. TCP

Answer: C

What is the primary task of IP (Internet Protocol) in the network layer?

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- A. Dividing messages into segments
- B. Translating mnemonic addresses to IP addresses
- C. Routing packets through the Internet
- D. Adding sequence numbers to message segments

Answer: C

What does a hop count value in IP packets determine?

- A. The number of packets transmitted simultaneously
- B. The number of routers in the Internet
- C. The number of times a packet can be forwarded
- D. The time it takes for a packet to reach its destination

Answer: C

What is the role of a proxy server in a network environment?

- A. It forwards messages between clients and servers.
- B. It communicates directly with servers to gather information.
- C. It acts as an intermediary between clients and servers to protect client information.
- D. It monitors the activities of firewalls within the network.

Answer: C

What is one of the primary functions of network auditing software?

- A. To collect information about network traffic
- B. To communicate with neighboring network layers

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- C. To detect and remove known viruses from the network
- D. To identify problems in the network before they escalate

Answer: D

In network security, what is the role of antivirus software?

- A. To forward packets between routers
- B. To provide a secure connection to the Internet
- C. To detect and remove known viruses and infections
- D. To act as a proxy server for client-server communication

Answer: C

How does a digital signature contribute to message authentication?

- A. It encrypts the entire message for security.
- B. It adds a unique port number to the message.
- C. It indicates the sender's identity and authenticity.
- D. It decrypts the message to verify its contents.

Answer: C

What is the significance of appending a hop count or time to live value to an IP packet?

- A. It determines the sender's identity.
- B. It specifies the order of packet transmission.
- C. It limits the number of times a packet can be forwarded.
- D. It measures the time it takes for a packet to reach its destination.

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Answer: C

In the context of public-key encryption, what is a digital signature?

- A. An encrypted message sent to the recipient
- B. An attachment that verifies the sender's identity
- C. A unique port number added to the message
- D. An encrypted version of the message itself

Answer: B

What is the primary goal of a certificate authority in network security?

- A. To maintain a network's forwarding table
- B. To prevent unauthorized access to a network
- C. To authenticate the identity of network users
- D. To update antivirus software on network devices

Answer: C

In the context of network security, what does the term "effective" refer to?

- A. The ability to execute an algorithm
- B. The efficiency of data transmission
- C. The order of execution in algorithms
- D. The speed of network auditing software

Answer: A

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What distinguishes an algorithm from a sequence of steps?

- A. The ability to execute unambiguous steps
- B. The inclusion of an ordered structure
- C. The presence of parallel processing
- D. The use of flip-flops in the process

Answer: B

What is the primary characteristic of an algorithm?

- A. The inclusion of parallel processing steps
- B. The ability to execute ambiguous steps
- C. The provision of well-established sequence
- D. The use of unambiguous, executable steps

Answer: D

Which layer of the layered approach to Internet software deals with directing the segments through the Internet?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Link layer

Answer: C

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What is the primary responsibility of the transport layer in Internet communication?

- A. Routing packets through the Internet
- B. Translating human-readable addresses into IP addresses
- C. Dividing long messages into segments
- D. Ensuring proper formatting of messages

Answer: C

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