# Multiple Choice Questions: Chapter 1 - Network Models

1. What is the primary function of the OSI model?

* A. To define network hardware specifications.
* B. To establish a universal framework for networking protocols.
* C. To manage cloud computing resources.
* D. To create a centralized internet standard.

1. Which layer of the OSI model is responsible for data packet framing?

* A. Transport
* B. Network
* C. Data Link
* D. Physical

1. What does the term 'protocol stack' refer to?

* A. A collection of network layers working together.
* B. A single network protocol.
* C. Hardware devices in a network.
* D. A cloud computing service.

1. Which layer of the OSI model manages end-to-end communication?

* A. Physical
* B. Network
* C. Transport
* D. Data Link

1. What layer of the OSI model is responsible for addressing and routing data packets?

* A. Data Link
* B. Physical
* C. Network
* D. Transport

1. Which device operates only at the Physical Layer of the OSI model?

* A. Switch
* B. Repeater
* C. Router
* D. Bridge

1. What is the main function of a bridge in a network?

* A. Connect multiple LANs using different protocols.
* B. Filter content by reading MAC addresses.
* C. Amplify network signals.
* D. Route data packets across WANs.

1. Layer 2 switches primarily operate on which OSI layer?

* A. Physical
* B. Data Link
* C. Network
* D. Transport

1. Which layer of the OSI model is responsible for presenting data in a readable format?

* A. Application
* B. Presentation
* C. Session
* D. Transport

1. Which layer of the OSI model is responsible for establishing and terminating connections?

* A. Application
* B. Session
* C. Transport
* D. Network

1. What does the Physical Layer of the OSI model handle?

* A. Data packet routing
* B. Electrical and physical specifications
* C. Error detection and correction
* D. Application services

1. What is a collision domain?

* A. A section of a network where collisions can occur.
* B. The domain where data packets are routed.
* C. The domain where broadcast traffic occurs.
* D. A section of the OSI model.

1. Which OSI layer is directly responsible for error detection?

* A. Network
* B. Transport
* C. Data Link
* D. Application

1. Which OSI layer provides services to the user?

* A. Presentation
* B. Application
* C. Session
* D. Transport

1. What is the main purpose of the Presentation layer in the OSI model?

* A. Encrypt and compress data.
* B. Handle user requests.
* C. Route packets across networks.
* D. Provide error-free data transmission.

1. What is the maximum number of layers in the OSI model?

* A. 5
* B. 7
* C. 9
* D. 10

1. Which OSI layer handles logical addressing?

* A. Data Link
* B. Transport
* C. Network
* D. Session

1. Which OSI layer breaks down data into smaller units called segments?

* A. Physical
* B. Data Link
* C. Transport
* D. Network

1. What is a primary function of a router?

* A. Amplify signals
* B. Connect LAN segments
* C. Forward packets between networks
* D. Establish user connections

1. What OSI layer is responsible for MAC addressing?

* A. Physical
* B. Data Link
* C. Network
* D. Transport

1. What is the role of the Session layer?

* A. Handle session tracking and management.
* B. Encrypt and compress data.
* C. Route packets across the network.
* D. Transmit data over the physical medium.

1. Which layer of the OSI model interacts directly with the hardware?

* A. Transport
* B. Network
* C. Data Link
* D. Physical

1. What is the primary feature of managed switches?

* A. Automatic signal regeneration
* B. Advanced configuration options
* C. Physical connectivity
* D. Traffic broadcasting

1. Which OSI layer is responsible for establishing virtual circuits?

* A. Transport
* B. Network
* C. Data Link
* D. Session

1. What does the acronym OSI stand for?

* A. Open Systems Integration
* B. Operational Systems Interface
* C. Open Systems Interconnection
* D. Open Software Integration

1. Which layer of the OSI model uses IP addresses?

* A. Transport
* B. Network
* C. Data Link
* D. Physical

1. What is the main feature of an unmanaged switch?

* A. Plug-and-play design
* B. Advanced VLAN configuration
* C. IP packet routing
* D. Quality of Service (QoS) support

1. Which OSI layer ensures complete delivery of data packets?

* A. Network
* B. Transport
* C. Data Link
* D. Physical

1. What type of switch operates at both Layer 2 and Layer 3?

* A. Layer 1 switch
* B. Layer 2 switch
* C. Layer 3 switch
* D. Layer 4 switch