

Cisco Certified Technician Practice Test (Sample)

Study Guide



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Questions

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- 1. What information does the show interfaces status command provide?**
 - A. VLAN assignment and port characteristics**
 - B. Diagnostic status of WAN connections**
 - C. Debugging output for configuration**
 - D. Routing metrics for packet forwarding**
- 2. What do the uplink ports on the Supervisor Engine indicate with their LINK LED?**
 - A. The power state of the engine**
 - B. The initialization sequence of the engine**
 - C. The link status of the uplink ports**
 - D. The overall system health**
- 3. Which feature characterizes the 2900 series ISRs?**
 - A. Only supports wireless connections**
 - B. Integrated Ethernet ports with multiple connectivity options**
 - C. Limited expansion capabilities**
 - D. Requires additional equipment to function**
- 4. What is the primary purpose of the Service Performance Engines (SPE) in the 3900 series ISRs?**
 - A. To reduce power consumption**
 - B. To enhance system performance and provide modular upgrades**
 - C. To enable remote installations**
 - D. To simplify user interface management**
- 5. What does the AIM stand for in Cisco terminology?**
 - A. Advanced Integration Module**
 - B. Automatic Integration Module**
 - C. Application Integration Module**
 - D. Analytic Integration Module**

- 6. What is the main function of Multiprotocol Label Switching (MPLS)?**
- A. To simplify routing by using long network addresses**
 - B. To direct data based on short path labels**
 - C. To support high-speed internet connectivity**
 - D. To provide additional security in data transfers**
- 7. In interface configuration mode, what is needed to successfully enter this mode?**
- A. Only the interface type**
 - B. Interface type and module port number**
 - C. Interface type, slot number, and module port number**
 - D. Slot number only**
- 8. Which of the following is a communication protocol that allows for the transmission of voice and data together?**
- A. IPX**
 - B. Ethernet**
 - C. ISDN**
 - D. Frame Relay**
- 9. What role does Data Terminal Equipment (DTE) play in a network?**
- A. It serves as a data source, destination, or both**
 - B. It manages the routing of data packets**
 - C. It acts as a firewall for network security**
 - D. It monitors network traffic for anomalies**
- 10. Why is Frame Relay considered a flexible network technology?**
- A. It utilizes multiple protocols at high speeds**
 - B. Users can define logical connections and required bandwidth**
 - C. It automatically configures bandwidth settings**
 - D. It can only connect ADSL lines**

Answers

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- 1. A**
- 2. C**
- 3. B**
- 4. B**
- 5. A**
- 6. B**
- 7. C**
- 8. C**
- 9. A**
- 10. B**

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Explanations

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1. What information does the show interfaces status command provide?

- A. VLAN assignment and port characteristics**
- B. Diagnostic status of WAN connections**
- C. Debugging output for configuration**
- D. Routing metrics for packet forwarding**

The command "show interfaces status" provides a comprehensive overview of the status of switch interfaces, including their operational state, VLAN assignments, and characteristics such as speed, duplex settings, and whether the port is set to access or trunk mode. This command is particularly useful for network technicians who need to quickly assess the health and configuration of multiple interfaces on a switch. By using this command, administrators can verify which VLAN a particular interface is associated with and confirm if the interfaces are up, down, or in a suspended state. This is essential for troubleshooting connectivity issues, ensuring that the interfaces are configured correctly, and understanding how devices are segmented within the network. The other options refer to different sets of functionalities that are not provided by the "show interfaces status" command. For example, WAN diagnostics, debugging outputs, and routing metrics pertain to other specific commands focused on those functionalities.

2. What do the uplink ports on the Supervisor Engine indicate with their LINK LED?

- A. The power state of the engine**
- B. The initialization sequence of the engine**
- C. The link status of the uplink ports**
- D. The overall system health**

The LINK LED on the uplink ports of the Supervisor Engine is designed to indicate the link status of those ports. When the LINK LED is lit, it signifies that there is an active connection established through the uplink port. This could mean that the port is properly connected to another device and that a valid network signal is being transmitted. Monitoring the LINK LED status is crucial for network administrators to ensure proper connectivity and to troubleshoot any potential issues that may arise with the uplink connections. In this context, the other options do not accurately describe the specific function of the LINK LED. The power state of the engine and the initialization sequence pertain to overall operational health and readiness, not directly related to the connectivity status of the ports. Similarly, while overall system health may include connection status as a factor, it is not the primary role of the LINK LED. Thus, the correct interpretation of the LINK LED function aligns specifically with monitoring the link status of the uplink ports.

3. Which feature characterizes the 2900 series ISRs?

- A. Only supports wireless connections
- B. Integrated Ethernet ports with multiple connectivity options**
- C. Limited expansion capabilities
- D. Requires additional equipment to function

The feature that characterizes the 2900 series Integrated Services Routers (ISRs) is that they come equipped with integrated Ethernet ports offering multiple connectivity options. This flexibility allows network administrators to connect various devices directly to the router, facilitating seamless communication within a network. The Ethernet ports support different types of connectivity, including LAN, WAN, and even VoIP options, making the 2900 series highly versatile for small to medium-sized business applications. This design caters to the need for comprehensive networking solutions in environments where various types of connections are essential, streamlining the setup and reducing the requirement for additional hardware. The integrated nature of these ports means less physical space is required for extra networking devices, potentially lowering costs and simplifying network architecture.

4. What is the primary purpose of the Service Performance Engines (SPE) in the 3900 series ISRs?

- A. To reduce power consumption
- B. To enhance system performance and provide modular upgrades**
- C. To enable remote installations
- D. To simplify user interface management

The primary purpose of the Service Performance Engines (SPE) in the 3900 series Integrated Services Routers (ISRs) is to enhance system performance and provide modular upgrades. The SPE plays a crucial role in ensuring that routers can adapt to the increasing demands for performance as network traffic grows. By incorporating SPEs, the 3900 series routers can be upgraded without needing to replace the entire unit, allowing for tailored capabilities to meet specific business needs or to adapt to new technologies. This modular approach supports different types of services such as voice, video, and data without compromising performance, thereby improving the overall efficiency of the router in handling various applications. In contrast, while reducing power consumption, enabling remote installations, or simplifying user interface management are important considerations for routers, they do not encapsulate the fundamental role of the SPEs. Instead, these aspects are secondary benefits or features that might result from an overall improved system designed within the context of the router's architecture and capabilities.

5. What does the AIM stand for in Cisco terminology?

- A. Advanced Integration Module**
- B. Automatic Integration Module**
- C. Application Integration Module**
- D. Analytic Integration Module**

In Cisco terminology, AIM stands for Advanced Integration Module. This module is designed to enhance the capabilities of Cisco routers by providing additional functionality such as voice and data integration, allowing for streamlined communication processes and improved network efficiency. The Advanced Integration Module is particularly significant as it caters to specific needs by integrating various services into a single platform. This integration plays a crucial role in reducing operational costs and complexity in network infrastructure. By utilizing AIM, businesses can implement various applications that optimize their network services, making these modules valuable tools in Cisco's portfolio for enhancing connectivity and performance. The other terms listed do not reflect the recognized standards in Cisco's hardware offerings or the functionality associated with these modules. This clarifies the distinctiveness and relevance of the Advanced Integration Module in Cisco's networking solutions.

6. What is the main function of Multiprotocol Label Switching (MPLS)?

- A. To simplify routing by using long network addresses**
- B. To direct data based on short path labels**
- C. To support high-speed internet connectivity**
- D. To provide additional security in data transfers**

The main function of Multiprotocol Label Switching (MPLS) is to direct data based on short path labels. This technology enhances the speed and efficiency of network traffic flow by routing packets based on labels assigned to them rather than relying on lengthy network addresses. These labels inform network devices about the path that data should take through the network, allowing for faster packet forwarding since devices do not need to look up extensive routing tables. By using short labels instead of complex addresses, MPLS optimizes the performance of the network, enabling various types of traffic, including voice, video, and data, to be efficiently handled. The other options do not accurately represent the primary function of MPLS. While MPLS can indeed facilitate high-speed internet connectivity and can contribute to better security measures, its fundamental strength lies in its capability to manage data routing via efficient label-based paths.

7. In interface configuration mode, what is needed to successfully enter this mode?

- A. Only the interface type**
- B. Interface type and module port number**
- C. Interface type, slot number, and module port number**
- D. Slot number only**

To successfully enter interface configuration mode, it is necessary to provide the interface type, slot number, and module port number. This is crucial because network devices, especially those with modular designs like routers and switches, can have multiple interfaces that can vary in type and configuration. By specifying the interface type (such as FastEthernet or GigabitEthernet), the slot number (indicating the position of the module within the device), and the module port number (designating the specific port on the module), the network administrator ensures that they are configuring the correct interface. This precise addressing allows for accurate and effective management of the network device's interfaces, enabling configurations to be applied consistently and without confusion. In contrast, providing only the interface type, only the slot number, or just the interface type combined with the module port number would not uniquely identify the correct interface on devices with multiple slots and interfaces, potentially leading to misconfigurations and operational issues.

8. Which of the following is a communication protocol that allows for the transmission of voice and data together?

- A. IPX**
- B. Ethernet**
- C. ISDN**
- D. Frame Relay**

The communication protocol that facilitates the simultaneous transmission of voice and data is Integrated Services Digital Network (ISDN). This protocol was developed to allow digital transmission of voice, video, and data over traditional telephone networks, which primarily were designed for analog signals. ISDN provides end-to-end digital connectivity and can carry multiple channels over a single physical connection, enabling the integration of voice calls and data transfer. ISDN enhances voice communication by offering clear voice quality and lower latency compared to older technologies. By allowing both voice and data services to be transmitted together efficiently, ISDN is particularly useful in scenarios where organizations require reliable communication for both telecommunications and data applications. This capability is essential for businesses that engage in videoconferencing, VoIP (Voice over Internet Protocol), and other applications that necessitate simultaneous voice and data transmission. The other options—IPX, Ethernet, and Frame Relay—do not inherently support combined voice and data transmission in the same streamlined manner as ISDN. IPX is primarily associated with Novell networks and does not handle voice communication. Ethernet is a local area network protocol suitable for data transmission but requires additional layers for voice services. Frame Relay is a data link layer protocol primarily used for connecting WANs and is not specifically designed for voice, although

9. What role does Data Terminal Equipment (DTE) play in a network?

- A. It serves as a data source, destination, or both**
- B. It manages the routing of data packets**
- C. It acts as a firewall for network security**
- D. It monitors network traffic for anomalies**

Data Terminal Equipment (DTE) plays a crucial role in a network by serving as a data source, destination, or both. This term typically refers to devices that interact directly with end-users or applications, allowing them to generate or receive data within a network. Examples of DTE include computers, printers, and data collection devices. In this capacity, DTE devices are responsible for sending data to and receiving data from the Data Communications Equipment (DCE), such as modems or network switches, which facilitate communication over the network. Understanding this role is vital because it emphasizes the interaction between devices in a network and the concept of how data flows between them. The ability of DTE to act as a source or destination ensures that data can be effectively managed and utilized by various applications and services within a network environment.

10. Why is Frame Relay considered a flexible network technology?

- A. It utilizes multiple protocols at high speeds**
- B. Users can define logical connections and required bandwidth**
- C. It automatically configures bandwidth settings**
- D. It can only connect ADSL lines**

Frame Relay is considered a flexible network technology primarily because users can define logical connections and required bandwidth. This capability allows businesses to tailor their network configuration to specific needs, effectively optimizing their resource usage and performance. The ability to set up virtual connections—or Virtual Circuits—enables users to manage their bandwidth according to traffic requirements. This means that organizations can adapt their network resources dynamically, scaling up or down based on need, which is essential for handling varying workloads without the need for extensive physical infrastructure changes. This flexibility in defining the parameters of the network contributes to the cost-effectiveness and resource management advantages of Frame Relay, making it a popular choice in environments where bandwidth requirements are unpredictable or fluctuate frequently. This characteristic distinguishes Frame Relay from more rigid networking options, which may not offer the same level of user control over connections and bandwidth allocation.