Cisco Certified Support Technician (CCST) Networking Practice Exam (Sample)

Study Guide

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Questions

1. Which year was the 802.11ax (Wi-Fi 6E) standard released?

A. 2018

B. 2019

C. 2020

D. 2021

2. What type of connection does a fiber port typically offer compared to a copper port?

A. Shorter distance limitation

B. Lower bandwidth capacity

C. Greater distance limitation

D. More connectivity options

3. What is the primary function of encapsulation in networking?

A. To protect sensitive data

B. To wrap data with protocol information at each layer of the OSI model

C. To convert signals for transmission over a medium

D. To detect errors in transmission

4. What aspect does an SFP port's flexibility enhance?

A. Speed options only

B. Power capabilities

C. Type of media connections

D. Data encryption methods

5. What kind of devices typically benefit from Power over Ethernet?

A. Desktop computers

B. Video cameras and wireless access points

C. Printers

D. Standard routers

6. Which IP address class supports the largest number of networks?

A. Class B

B. Class A

C. Class C

D. Class D

7. What is the primary function of a WAN?

A. Connects devices in a limited area

B. Facilitates communication over a large geographical area

C. Connects multiple LANs within a building

D. Provides high-speed connectivity for local networks

8. What does an off status LED indicate for the system power?

A. No power

B. Operating normally

C. Has power but is not operating correctly

D. Currently in standby mode

9. What is a common symptom of a broadcast storm in a network?

A. Significant network slowdown or outages

B. Increased data transfer speeds

C. Improved connectivity between devices

D. Stable network performance

10. What flexibility do remote workers have?

A. They can only work from the office

B. They can only work from home

C. They can perform job duties from home and other locations

D. They must work exclusively in the cloud

Answers

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

Explanations

1. Which year was the 802.11ax (Wi-Fi 6E) standard released?

A. 2018

B. 2019

C. 2020

D. 2021

The 802.11ax standard, commonly referred to as Wi-Fi 6, was officially released in 2019. However, the term Wi-Fi 6E refers to the extension of Wi-Fi 6 to the 6 GHz band, which became widely adopted and recognized in 2020. This distinction is crucial, as while the core 802.11ax standard was established earlier, the enhancements that truly defined Wi-Fi 6E developed significantly in the following year. Understanding that Wi-Fi 6E operates on the newly allocated 6 GHz band provides a better grasp of its capabilities, such as increased bandwidth, reduced latency, and improved network efficiency, benefiting environments with dense wireless device usage. The release dates for these standards reflect the evolution of wireless technology to accommodate growing demands for faster and more reliable connections.

2. What type of connection does a fiber port typically offer compared to a copper port?

A. Shorter distance limitation

B. Lower bandwidth capacity

C. Greater distance limitation

D. More connectivity options

Fiber ports are designed to transmit data over much longer distances compared to copper ports. This capability is due to the nature of fiber optic technology, which uses light to carry signals rather than electrical impulses as in copper cabling. Fiber optics can maintain signal integrity over several kilometers without significant loss, while copper cables generally face severe attenuation and interference over shorter distances, typically limited to about 100 meters for Ethernet connections. This inherent advantage of fiber makes it ideal for backbone connections in larger networks or for interconnecting data centers across significant distances. The ability to support greater distance limitations means that organizations can extend their networks further without the need for signal repeaters or boosters, resulting in more efficient network management and design. Therefore, the answer indicating greater distance limitation accurately reflects the distinguishing characteristic of fiber ports compared to copper ports.

3. What is the primary function of encapsulation in networking?

A. To protect sensitive data

B. To wrap data with protocol information at each layer of the OSI model

C. To convert signals for transmission over a medium

D. To detect errors in transmission

The primary function of encapsulation in networking is to wrap data with protocol information at each layer of the OSI model. This process allows data to be properly formatted for transmission over the network by enclosing it with necessary headers and trailers that provide contextual information. Each layer of the OSI model adds its own specific header (and sometimes a trailer) to the data, which includes essential details such as source and destination addresses, error-checking information, and control data. Encapsulation ensures that the data can be interpreted correctly as it moves through various layers and across different types of networks. By following this structure, the encapsulation process enables different protocols to function smoothly, allowing for effective communication between diverse systems and devices. This practice is fundamental in ensuring that data remains coherent as it is transmitted and received. While protecting sensitive data, converting signals, and error detection are important functions in networking, they are not the primary purpose of encapsulation. Instead, encapsulation focuses on the proper packaging of data with protocol-related information to maintain the integrity and usability of the data as it travels across the network.

4. What aspect does an SFP port's flexibility enhance?

A. Speed options only

B. Power capabilities

C. Type of media connections

D. Data encryption methods

An SFP (Small Form-factor Pluggable) port's flexibility significantly enhances the type of media connections it can support. This modularity allows network engineers to easily insert different types of transceiver modules into the same SFP port, adapting it to various network environments and requirements. For example, an SFP port can accommodate fiber optic cables with various wavelengths or copper cables, such as those used in Ethernet. This adaptability is especially valuable in networking environments where the media type might need to change based on the distance of the connection, bandwidth requirements, or existing infrastructure. Thus, the ability to mix and match different transceivers lends itself to greater network design flexibility, ultimately enhancing the overall efficiency and effectiveness of the network setup. While an SFP port may influence speed options and could relate indirectly to power capabilities, its primary advantage lies in its ability to support various media connections, allowing for versatile and scalable network configurations. Data encryption methods are not connected to the function of an SFP port, which is focused on physical data transmission.

5. What kind of devices typically benefit from Power over Ethernet?

A. Desktop computers

B. Video cameras and wireless access points

C. Printers

D. Standard routers

Power over Ethernet (PoE) is a technology that allows network cables to carry electrical power along with data to remote devices, eliminating the need for separate power supplies. This capability is particularly advantageous for devices that require both data connectivity and power but may be located in areas where it is difficult or impractical to provide a standard electrical outlet. Video cameras and wireless access points are typical examples of devices that benefit from Power over Ethernet. Video cameras, especially IP surveillance cameras, often need to be installed in locations such as ceilings or outside buildings where access to traditional power sources can be challenging. By using PoE, these cameras can receive the necessary power directly through the Ethernet cable, simplifying installation and reducing the amount of wiring required. Wireless access points also significantly benefit from PoE for similar reasons. They are often installed in ceilings or walls in locations where it can be difficult to run power cabling. Using PoE allows network administrators to place access points wherever they are needed most for optimal Wi-Fi coverage without worrying about the proximity to power outlets. The other device categories, like desktop computers, printers, and standard routers, typically either draw more power than PoE can provide or have less challenging installation environments where standard power sources can be accessed easily. Desktops and

6. Which IP address class supports the largest number of networks?

A. Class B

B. Class A

C. Class C

D. Class D

The correct answer is Class A because it supports the largest number of networks compared to the other classes. In Class A, the first octet (the first 8 bits) of the IP address is used to identify the network, while the remaining three octets (24 bits) are used for host addresses within that network. This structure allows for a very large number of possible networks, specifically 128 (from 0 to 127 in the first octet), although Class A typically starts from 1. This vast allocation permits a maximum of approximately 16 million hosts per network, further emphasizing its capacity for extensive networking. In contrast, Class B allows for 16,384 networks, using the first two octets for network identification while allocating the last two for hosts, thus supporting up to 65,534 hosts per network. Class C, on the other hand, supports the fewest networks with around 2 million networks due to its configuration of using three octets for network identification and only one for hosts, accommodating up to 254 hosts per network. Class D is designated for multicast addresses and does not function as a traditional class for defining networks and hosts in the same way as A, B, and C do. Consequently, Class

7. What is the primary function of a WAN?

A. Connects devices in a limited area

B. Facilitates communication over a large geographical area

C. Connects multiple LANs within a building

D. Provides high-speed connectivity for local networks

The primary function of a Wide Area Network (WAN) is to facilitate communication over a large geographical area. WANs connect different local area networks (LANs) that may be spread across cities, countries, or even continents, allowing devices in different locations to communicate with each other. This is essential for organizations with offices in multiple locations, enabling them to share resources, data, and applications regardless of physical distance. While local networks like LANs cover smaller areas, such as a single building or campus, WANs are designed specifically to overcome the limitations of distance and provide connectivity over vast spaces. This capability is fundamental for enabling the global connectivity that many businesses and services rely on today.

8. What does an off status LED indicate for the system power?

A. No power

B. Operating normally

C. Has power but is not operating correctly

D. Currently in standby mode

An off status LED indicating no power provides a clear visual cue that the device is not receiving electrical power. This situation can arise from a variety of issues, such as a power source being disconnected, a faulty power supply, or a cable that may be damaged or improperly connected. In a networking context, it is crucial for devices to have power in order to function correctly, so the off LED serves as an important indicator for troubleshooting. If the LED is off, this means that the device is completely inactive and cannot perform any operations, such as packet forwarding or device management. Recognizing that an off LED means no power helps technicians quickly identify and rectify issues in the network without needing to delve deeply into configuration or operational states that pertain to a powered device.

9. What is a common symptom of a broadcast storm in a network?

A. Significant network slowdown or outages

B. Increased data transfer speeds

C. Improved connectivity between devices

D. Stable network performance

A broadcast storm occurs when there is an excessive amount of broadcast traffic on the network, often caused by misconfigured switches, network loops, or faulty devices. As a result, the network becomes overloaded with broadcast frames, which can dramatically slow down or even halt network performance entirely. This saturation can lead to significant delays in data packets being sent and received, thereby causing slow connections and outages for users. In this scenario, the correct answer identifies a common and recognizable symptom that network administrators can observe during a broadcast storm. Recognizing this symptom is crucial for troubleshooting and mitigating network performance issues caused by such conditions.

10. What flexibility do remote workers have?

A. They can only work from the office

B. They can only work from home

C. They can perform job duties from home and other locations

D. They must work exclusively in the cloud

Remote workers enjoy significant flexibility in their working arrangements, allowing them to perform their job duties from home and other locations. This adaptability is essential for many professionals, as it enables them to create a work environment that best suits their needs, preferences, and schedules. This flexibility can enhance productivity, reduce commute times, and improve work-life balance, making it an appealing option for both employees and employers. By being able to work from various locations, remote workers can also access different resources and environments, which may foster creativity and reduce the monotony often associated with working in a single location. The other options limit the working environment significantly. Exclusive office work restricts the employee's ability to leverage the benefits of remote work, such as better scheduling and cost savings. Limiting workers to only their homes removes the option to work from alternative locations, such as co-working spaces or while traveling. The requirement to work exclusively in the cloud might also imply a restriction that does not capture the full spectrum of remote work environments, where physical presence isn't always necessary, allowing for a range of tools and setups.