FBLA Networking Infrastructures Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

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Questions

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1. What network component is used to extend the distance of the signal when transmitting over the normal specified distance?

A. Repeater

B. Router

C. Modem

D. Switch

2. What does EPROM stand for?

A. Erasable Programmable Read Only Memory

B. Embedded Programmable ROM

C. Electrically Programmable Read Only Memory

D. Extended Programmable Read Only Memory

3. Which features are NOT typically associated with a switch?

A. Filtering using MAC addresses

B. Creation of collision domains

C. Acting as a repeater

D. Forwarding frames based on destination addresses

4. Which utility would you use to verify the network connectivity of a remote host?

A. Ping

B. Netcat

C. SSH

D. Traceroute

5. What advantage does a switch provide in a LAN environment?

A. Levels of security

B. Increased IP routing

C. Creation of separate collision domains

D. Faster internet speeds

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6. What does the term 'Client' refer to in networking?

A. A server that hosts files

B. A computer that uses the services of another program

C. A device for network bridging

D. A specialized data management system

7. Which fiber-optic connector employs a push-pull latching mechanism?

A. LC

B. SC

C. ST

D. MT-RJ

8. What does WINS stand for in network services?

A. Windows Internet Name Service

B. Windows Internal Name System

C. Web Internet Naming Service

D. Wireless Internet Network Service

9. Which statement best describes the difference between a Resource Kit and a Knowledge Base?

A. The Resource Kit contains updates, while the Knowledge Base provides troubleshooting tips.

B. The Knowledge Base contains fixes to known problems and the Resource Kit contains self-education material.

C. The Resource Kit includes software patches while the Knowledge Base offers training seminars.

D. The Knowledge Base provides installation manuals while the Resource Kit includes user forums.

10. Which public key encryption system is used to verify the authenticity of an e-mail sender and encrypt e-mail data during transmission?

A. SSL

B. PGP

C. HTTPS

D. S/MIME

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Answers

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

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Explanations

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1. What network component is used to extend the distance of the signal when transmitting over the normal specified distance?

A. Repeater

B. Router

C. Modem

D. Switch

The correct choice is a repeater because it is specifically designed to extend the range of a network by regenerating and amplifying signals. When data is transmitted over a network, especially over long distances, the signal can degrade due to loss or interference. A repeater receives this weakened signal, boosts it, and then retransmits it, effectively enabling the signal to cover greater distances without loss of quality. This function is crucial in maintaining the integrity of data transmission, particularly in large networks or environments where distances between network devices exceed the normal operational range. The use of repeaters helps ensure that users can connect to the network reliably, even if they are located far from the source of the signal. In contrast, other options like routers, modems, and switches serve different purposes in a network. Routers direct data between different networks, modems convert digital signals to analog signals (and vice versa) for communication over telephone lines or cable systems, and switches connect devices within the same network segment, facilitating local area network (LAN) communication rather than extending signal distance.

2. What does EPROM stand for?

A. Erasable Programmable Read Only Memory

B. Embedded Programmable ROM

C. Electrically Programmable Read Only Memory

D. Extended Programmable Read Only Memory

EPROM stands for Erasable Programmable Read Only Memory. This type of memory is a non-volatile form of storage, allowing data to be written to it and later erased using ultraviolet light. The key characteristics of EPROM include its ability to retain data even when the power supply is turned off and its erasure capability, which distinguishes it from traditional ROM. Users can reprogram EPROM chips multiple times, making them useful for storing firmware and other types of data that may need updating without requiring a complete hardware replacement. Understanding these functions and applications is crucial for recognizing the versatility and usage of EPROM in computer systems and embedded devices.

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3. Which features are NOT typically associated with a switch?

A. Filtering using MAC addresses

B. Creation of collision domains

C. Acting as a repeater

D. Forwarding frames based on destination addresses

A switch primarily functions at the data link layer of the OSI model, where it plays a crucial role in managing network traffic. One key feature of a switch is its ability to filter traffic using MAC addresses, which allows it to send data only to the device that needs it, rather than flooding the entire network. This enhances the efficiency of the network. Another important function is the creation of collision domains. A switch creates a separate collision domain for each connected device. This means that devices connected to a switch can transmit data simultaneously without interfering with each other's signals, significantly reducing the chances of collisions compared to older technologies like hubs, which operate in a single collision domain. Forwarding frames based on destination addresses is a fundamental characteristic of a switch. It examines the destination MAC address in the frames it receives and makes intelligent decisions about where to forward those frames, ensuring that the correct device receives the necessary data. In contrast, acting as a repeater is not a typical feature of a switch. A repeater's role is to simply regenerate and amplify signals to extend the range of a network, without any ability to filter or intelligently direct traffic. Thus, while switches enhance network performance through smart traffic management, repeaters work at a more basic level without those intelligent

4. Which utility would you use to verify the network connectivity of a remote host?

A. Ping

B. Netcat

C. SSH

D. Traceroute

Using the Ping utility is an effective way to verify the network connectivity of a remote host. It works by sending Internet Control Message Protocol (ICMP) echo request packets to the target address and waits for a response in the form of echo reply packets. This process helps determine whether the remote host is reachable over the network and provides information about the round-trip time for each packet sent. When using Ping, you can quickly conclude if the host is online or if there are issues preventing the connection. A successful reply indicates that the path to the host is functioning properly, whereas no response or a timeout typically suggests that there might be a network issue, firewall blocking, or that the host is turned off. Other utilities like Netcat are more versatile for establishing connections and transferring data, but they are not primarily designed to check connectivity. SSH is primarily used for secure remote access to devices, while Traceroute helps identify the path taken by packets to their destination but does not simply verify connectivity — instead, it shows the route taken, which can be more complex than just checking if a host is online.

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5. What advantage does a switch provide in a LAN environment?

A. Levels of security

B. Increased IP routing

C. Creation of separate collision domains

D. Faster internet speeds

In a Local Area Network (LAN) environment, a switch provides the significant advantage of creating separate collision domains. This is fundamental to improving network efficiency and performance. When devices are connected through a switch, each port on the switch represents an individual collision domain. This means that data packets sent from one device do not collide with packets sent from another device on a different port. In contrast, when devices are connected in a shared medium, such as a hub-based network, all devices share a single collision domain, leading to potential data collisions when two or more devices attempt to communicate simultaneously. By isolating each device's communication within its own collision domain, switches help ensure that data transmission can occur without interference, thus enhancing overall network performance and reducing delays. This capability is crucial for maintaining high throughput and efficient data transfer, especially in networks with many devices. In scenarios without switches, devices must contend with shared bandwidth, which can lead to network congestion and degraded performance, particularly when multiple devices are active simultaneously. Therefore, the formation of separate collision domains is a primary and beneficial function of switches in LAN setups.

6. What does the term 'Client' refer to in networking?

A. A server that hosts files

B. A computer that uses the services of another program

C. A device for network bridging

D. A specialized data management system

In networking, the term 'Client' refers to a computer or device that accesses services provided by another computer, known as a server. This relationship is foundational in client-server architectures, where clients initiate requests for information or resources and servers respond to those requests. Clients can range from concrete devices such as personal computers or smartphones to applications like web browsers that request data from servers. The process allows users to access and utilize resources, such as files or applications, hosted on the server. The other options describe different concepts in networking and computing. A server hosting files specifically implies a role that contrasts with a client's role. Network bridging refers to the function of connecting two or more segments of a network to work as a single network, which does not define a client. A specialized data management system implies functionalities focused on organizing and managing data rather than the client-server interaction model. Thus, the definition clearly aligns with the concept of a client as it is understood in networking contexts.

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7. Which fiber-optic connector employs a push-pull latching mechanism?

A. LC

B. SC

C. ST

D. MT-RJ

The choice of connector that employs a push-pull latching mechanism is the SC connector. This mechanism is designed for easy and secure connection and disconnection, which can enhance usability in environments where frequent reconnecting might occur. The push-pull design allows users to insert and remove the connector with a simple push or pull motion, making it particularly user-friendly. This feature is beneficial in data centers and telecommunication settings, where efficiency and reliability are vital. The other types of connectors, such as LC, ST, and MT-RJ, utilize different methods for securing the connection. The LC connector, while also popular, features a latch mechanism that retains the connector but does not use a push-pull system. The ST connector typically relies on a twist-on mechanism for securing the connection, while the MT-RJ connector has a more compact design and uses a hinged latch, but does not employ the same straightforward push-pull release feature found in SC connectors. Each connects in its own way, but the distinctiveness of the push-pull mechanism sets the SC connector apart in terms of ease of use and ergonomic design.

8. What does WINS stand for in network services?

A. Windows Internet Name Service

B. Windows Internal Name System

C. Web Internet Naming Service

D. Wireless Internet Network Service

WINS stands for Windows Internet Name Service. It is a name resolution service that resolves NetBIOS names to IP addresses within a network, particularly in Windows-based environments. Prior to the widespread adoption of DNS (Domain Name System), WINS was primarily used in networks that relied on NetBIOS for communications. WINS served a crucial role in helping computers find one another by translating the user-friendly names used in the local network into the numerical IP addresses that computers use to communicate. It is particularly useful in managing dynamic networks where computers frequently join or leave, since it can automatically update its records as devices connect or disconnect. This mechanism allows for easier network management and enables users to access resources using names rather than having to remember or use numeric IP addresses. While not as commonly used today due to the preference for DNS, understanding WINS is important for grasping the evolution of name resolution services in networking.

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9. Which statement best describes the difference between a Resource Kit and a Knowledge Base?

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C. The Resource Kit includes software patches while the Knowledge Base offers training seminars.

D. The Knowledge Base provides installation manuals while the Resource Kit includes user forums.

The correct answer highlights a significant distinction between the two referenced tools in the context of technical support and user assistance. The Knowledge Base is a curated repository that holds documentation of common issues, along with fixes and solutions to known problems. It serves as a valuable resource for users facing specific challenges, enabling them to troubleshoot issues efficiently and understand system behaviors without requiring direct support interaction. On the other hand, the Resource Kit typically includes self-education materials that may take the form of guides, tutorials, or other instructional content aimed at helping users learn how to use a product or service more effectively. This can include information on best practices, advanced functionalities, or even general usage techniques, rather than just addressing specific problems. Thus, the statement accurately captures the essence of both the Knowledge Base as a problem-solving tool and the Resource Kit as a learning aid, distinguishing their purposes in user support infrastructure.

10. Which public key encryption system is used to verify the authenticity of an e-mail sender and encrypt e-mail data during transmission?

A. SSL

B. PGP

C. HTTPS

D. S/MIME

The option referring to PGP (Pretty Good Privacy) is the correct choice for the question regarding a public key encryption system used to verify the authenticity of an email sender and encrypt email data during transmission. PGP employs a combination of symmetric and asymmetric encryption techniques to secure email communications. When an email is sent with PGP, it uses the sender's private key to create a digital signature, which allows the recipient to authenticate the sender's identity. This digital signature confirms that the email has not been altered during transmission. Additionally, PGP encrypts the email body, ensuring that only the intended recipient, who possesses the corresponding private key, can decrypt and read the message. PGP's dual functionality of authentication and encryption makes it a popular choice for securing email communications. This specific use case aligns with the requirements laid out in the question, highlighting its effectiveness in ensuring both authenticity and data security. In contrast, other options like SSL (Secure Sockets Layer) and HTTPS (Hypertext Transfer Protocol Secure) are protocols primarily designed to secure data over networks and do not directly relate to email encryption or sender verification. S/MIME (Secure/Multipurpose Internet Mail Extensions) is also a strong contender for email security, but PGP is specifically

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