5.6 Module Quiz

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Time Spent: 27:48

Score: 95%

Passing Score: 80%

Question 1 ✓ Correct

What is Bluetooth Low Energy (BLE) primarily designed for?

- ○ Large file transfers between computers and mobile devices
- ○ Enabling backward compatibility with all previous Bluetooth versions
- ● Small battery-powered devices that transmit small amounts of data infrequently ✓ Correct
- ○ Continuous streaming of high-definition video content

Explanation

Bluetooth Low Energy (BLE) is designed specifically for small battery-powered devices, transmitting small amounts of data occasionally to conserve power. BLE is not intended for continuous high-bandwidth applications like video streaming or large file transfers. BLE is not backward compatible with classic Bluetooth, although some devices can support both BLE and classic Bluetooth simultaneously.

Related Content

5.4.12 Bluetooth, RFID, and NFC

resources\questions\q_wire_net_ble_purpose.question.xml

Question 2 Correct

You are using a patch panel to connect the computers in your building to the appropriate switches, and you need to connect the Ethernet wires from the building network port cables to the patch panel.

Where do you connect the wires on a patch panel?

- You connect the incoming wires to the front and the outgoing wires to the back.
- You connect the wires to the backside of the panel. ✓ Correct
- You connect the wires to the front side of the panel.
- You connect the outgoing wires to the front and the incoming wires to the back.

Explanation

All network ports in a building terminate at a patch panel. The Ethernet cables are punched down and terminate on the backside of the patch panel.

The front of the patch panel consists of RJ-45 ports. An Ethernet cable runs from the patch panel to the network switch to provide the connection between a device that is connected to the network port and the switch.

There are no specified incoming or outgoing wires on an Ethernet cable.

Related Content

- 5.2.3 Patch Panels
- 5.2.6 Switches
- 5.2.9 Unmanaged and Managed Switches
- 5.5.1 Network Switches
- 15.2.4 Group Policy and Login Scripts

resources\questions\q_net_devs_patch_panel_backside_pp7.question.xml

Question 3

Correct

Which type of network is best suited for a company that operates across multiple locations in a city?

- WLAN
- PAN
- LAN
- MAN ✓ Correct

Explanation

A MAN (Metropolitan Area Network) is ideal for a company with networks spread across multiple locations in a single city, as it bridges the gap between local LANs and broader WANs. LANs are restricted to a single site, PANs cover very small areas, and WLANs are limited to local, often indoor, wireless communication.

Related Content

5.1.1 LANs and WANs

resources\questions\q_net_type_multiple_locations.question.xml

Question 4 ✓ Correct

Why is it important to label ports on a patch panel?

- (●) To reduce errors during troubleshooting ✓ Correct
- ( ) To prevent data collisions
- ( ) To increase network speed
- ( ) To provide redundancy in case of failure

Explanation

Labeling ports reduces errors during troubleshooting by making it easy to identify and match connections between the patch panel and switch. Proper labeling also speeds up network changes and repairs. Increasing network speed depends on hardware specifications, not labeling. Providing redundancy involves backup devices or paths, not labeling. Data collisions are eliminated by switches, which provide separate collision domains, not by labeling.

Related Content

- 5.2.3 Patch Panels
- 5.2.6 Switches
- 5.2.9 Unmanaged and Managed Switches
- 5.5.1 Network Switches
- 15.2.4 Group Policy and Login Scripts

resources\questions\q_net_switches_and_patchpanels_05.question.xml

Question 5 Correct

A technician determines that an older network hub that connects 24 workstations is performing poorly due to excessive network collisions.

Which of the following network devices would be the BEST replacement?

- Router
- Bridge
- Patch panel
- Switch ✓ Correct

Explanation

A switch maintains a table of MAC addresses by port and forwards network data packets to only the port that matches the MAC address. This significantly reduces collisions.

A router manages IP traffic between networks.

A bridge separates two network segments and forwards data packets from one segment to another.

A patch panel organizes network cables and connects inbound and outbound cables.

Related Content

resources\questions\q_net_devs_switch_avoid_net_collisions_pp7.question.xml

Question 6 Correct

You have been contacted by OsCorp to recommend a wireless internet solution. The wireless strategy must support a transmission range of 150 feet, use a frequency range of 2.4 GHz, and provide the highest possible transmission speeds. Which of the following wireless solutions should you recommend?

- 802.11b
- 802.11ac
- 802.11g ✓ Correct
- 802.11a

Explanation

Of the technologies listed, the IEEE 802.11g wireless standard best meets the desired requirements. It has a 2.4 GHz frequency range, a transmission range of up to 150 feet, and a maximum speed of 54 Mbps.

The 802.11ac wireless standard uses the 5 GHz frequency range.

The 802.11a wireless standard offers maximum speeds of 54 Mbps but uses the 5 GHz frequency range.

802.11b uses the 2.4 GHz frequency range but supports only 11 Mbps transfer speeds.

Related Content

5.4.2 Frequency Bands

5.4.4 IEEE 802.11b/g

resources\questions\q_wire_net_80211a_sol_pp7.question.xml

Question 7 Correct

A printer is behaving erratically; you suspect a faulty parallel port. Which tool can you use to test the parallel port?

- Multimeter
- Cable tester
- Ammeter
- Loopback plug ✓ Correct

Explanation

A loopback plug allows an output signal to be returned as input. Loopback plugs are used to test serial and parallel ports.

A cable tester verifies that a network can carry a signal from one end to the other and that all wires within the connector are in their correct positions.

A multimeter measures electrical properties, such as voltage, amps, and resistance.

An ammeter is an instrument that measures the flow of electric current in a circuit.

Related Content

5.3.8 Copper Cabling Test Tools

resources\questions\q_net_cable_loopback_plugs_test_pp7.question.xml

Question 8 ✓ Correct

You are in the process of setting up an Ethernet network for a new building at your company's headquarters. You need to connect the wires from the different Ethernet office wall plates to your network rack.

Which of the following components on the network rack should you use to connect the wires from the office wall plates?

- ○ Ethernet switch
- ○ UPS
- ◉ Ethernet patch panel ✓ Correct
- ○ Ethernet router

Explanation

An Ethernet patch panel typically terminates wires that run from different Ethernet office wall plates.

Once you have terminated the wires on the patch panel, you can then use patch cables (Ethernet cables with RJ-45 connectors) to connect these ports to the Ethernet switch.

An Ethernet router is a device that connects two or more network segments or subnets. It is not designed to terminate wires that run from different Ethernet office wall plates.

An uninterruptible power supply (UPS) is a device that constantly provides battery power to a computer while the batteries recharge through the wall outlet. A UPS is not designed to terminate wires that run from different Ethernet office wall plates.

Related Content

- 5.2.3 Patch Panels
- 5.2.6 Switches
- 5.2.9 Unmanaged and Managed Switches
- 5.5.1 Network Switches
- 15.2.4 Group Policy and Login Scripts

resources\questions\q_net_devs_rack_patch_panel_def_pp7.question.xml

Question 9 Correct

Which IEEE wireless standards specify transmission speeds up to 54 Mbps? (Select two.)

- [x] 802.11a ✓ Correct
- [x] 802.11g ✓ Correct
- [ ] 802.11b
- [ ] Bluetooth
- [ ] 802.1ac

Explanation

Both the 802.11a and the 802.11g wireless standards specify maximum transmission speeds up to 54 Mbps.

Bluetooth is a wireless standard that is commonly used to connect peripheral devices and operates at 720 Kbps.

The 802.11b wireless standard provides transmission speeds of 11 Mbps.

The 802.11ac wireless standard provides transmission speeds of up to 2.6 Gbps.

Related Content

5.4.3 IEEE 802.11a

5.4.4 IEEE 802.11b/g

5.4.5 802.11n

5.4.7 Wi-Fi 5 and Wi-Fi 6

5.4.8 Wi-Fi 7 (802.11be)

resources\questions\q_wire_net_80211a_80211g_54_mbps_pp7.question.xml

Question 10 ✕ Incorrect

Currently, your company is in the process of upgrading security in the company headquarters building by installing biometric sensors to limit access to specific rooms.

Your network switches are PoE-enabled, which allows biometric sensors to connect to switches without an external power source.

Which of the following PoE standards is designed for use with biometric sensors?

- ◉ 802.3af ✕ Incorrect
- ○ PoE+ ✓ Correct
- ○ Higher-power PoE
- ○ Super PoE

Explanation

PoE+ (which can use Mode A or Mode B) provides a maximum of 30 watts of power, which is designed for use with devices like biometric sensors and tablets.

Super PoE does not reflect a real standard.

802.3af allows powered devices to draw up to about 13 W. Basic devices such as a VoIP handset, basic wireless access points, and basic security cameras use this standard.

Higher-power PoE provides a maximum of 100 watts of power, which is designed for use with devices such as laptops, TVs, and other high-powered devices.

Related Content

5.2.10 Power over Ethernet

resources\questions\q_net_devs_biometric_sensor_poe_pp7.question.xml

Question 11

Correct

What does a dBm measurement represent?

- (●) A signal strength ratio compared to 1 milliwatt (mW) ✓ Correct
- ( ) The bandwidth capacity of the network
- ( ) A measurement of the device's battery level
- ( ) The amount of power output by the Wi-Fi analyzer

Explanation

dBm measures signal strength relative to 1 milliwatt (mW), with values closer to zero indicating stronger signals. It is not related to battery level, bandwidth capacity, or the power output of the analyzer itself but is a standard way to express the strength of wireless signals.

Related Content

5.4.10 Wi-Fi Analyzers

resources\questions\q_wire_net_wifi_dbm_measurement.question.xml

Question 12 ✓ Correct

What is the primary function of a network tap?

- ○ To replace network switches in small networks
- ○ To amplify signals passing over a cable for longer transmission distances
- ◉ To intercept and copy signals passing over a cable for monitoring or analysis ✓ Correct
- ○ To provide additional ports for connecting multiple network devices

Explanation

The main function of a network tap is to intercept and copy signals passing over a cable, enabling the captured data to be sent to a packet or protocol analyzer for monitoring or analysis. Amplifying signals for longer distances is not the purpose of a tap; this would involve repeaters or amplifiers. Network taps do not add additional connection ports for devices like a switch would, nor are they intended to replace switches in small networks.

Related Content

5.3.9 Network Taps

resources\questions\q_net_cable_network_tap.question.xml

Question 13 ✓ Correct

Why are datacenters located in purpose-built facilities?

- ○ To reduce construction costs
- ○ To store company data in a convenient location
- ○ To provide a comfortable workspace for employees
- ◉ To offer highly available environments for critical applications ✓ Correct

Explanation

Datacenters are specifically designed to support critical applications, ensuring reliability and availability. The primary purpose of a datacenter is to support server equipment, not employee comfort. Storing data in a convenient location does not emphasize the reliability required for datacenters. Datacenters are generally expensive to construct due to their specific and specialized requirements.

Related Content

resources\questions\q_net_type_datacenter_facilities.question.xml

Question 14 Correct

Which wireless standard can stream data at a rate of up to 54 Mbps using a frequency of 5 GHz?

- 802.11n
- 802.11a ✓ Correct
- 802.11g
- 802.11b

Explanation

802.11a can stream data at a rate of up to 54 Mbps using a frequency of 5 GHz.

802.11b can stream data at a rate of up to 11 Mbps using a frequency of 2.4 GHz.

802.11g can stream data at a rate of up to 54 Mbps using a frequency of 2.4 GHz.

802.11n can stream data at a rate of up to 600 Mbps using a frequency of 2.4 GHz or 5 GHz.

Related Content

- 5.4.3 IEEE 802.11a
- 5.4.4 IEEE 802.11b/g
- 5.4.5 802.11n
- 5.4.7 Wi-Fi 5 and Wi-Fi 6
- 5.4.8 Wi-Fi 7 (802.11be)

resources\questions\q_wire_net_80211a_pp7.question.xml

Question 15

Correct

What is the purpose of a screened subnet in a network?

- To facilitate direct communication between employees and external clients without restrictions
- To strictly filter and monitor traffic between the private LAN and the public Internet ✓ Correct
- To allow internal LAN traffic only, without access to external networks
- To allow unrestricted traffic between the private LAN and the public Internet

Explanation

The screened subnet is designed to strictly filter and monitor traffic between the private LAN and the public Internet, creating a secure boundary. This setup protects the LAN from direct exposure to the Internet. Unrestricted traffic would compromise network security. Direct, unrestricted communication is not allowed in a screened subnet as this would also compromise security because filtering and restricting traffic is essential for security. The screened subnet is intended for controlled access to external networks, not for restricting all external access, which is overly protected and would interfere with regular business operations.

Related Content

5.1.1 LANs and WANs

resources\questions\q_net_type_screened_subnet.question.xml

Question 16 ✓ Correct

A technician connects two network switches using a twisted-pair crossover cable.

Which of the following identifies the wiring standard required on each end of the crossover cable?

- ○ Both ends must only be T568A.
- ○ One end must be Cat 5 Ethernet, and the other must be T568B.
- ○ Both ends must only be T568B.
- ◉ One end must be T568A, and the other must be T568B. ✓ Correct

Explanation

A crossover cable connects two switches that do not support auto-uplinking. A crossover cable is constructed using the T568A wiring standard on one end and the T568B standard on the other end.

If both ends are T568A, the cable is a straight-through cable.

If both ends are T568B, the cable is a straight-through cable.

Cat 5 Ethernet describes the pin usage, not the connection type for a crossover or straight-through cable.

Related Content

5.3.4 Cat Standards

5.3.5 Copper Cabling Connectors

resources\questions\q_net_cable_connector_pp7.question.xml

Question 17 Correct

A network technician is installing a device with an inductor that will copy all the traffic coming through the cable to a monitor port. What type of device is the technician installing?

- SMF
- Active TAP
- MMF
- Passive TAP ✓ Correct

Explanation

A Passive TAP (Test Access Point) is a device used in network monitoring that allows a copy of the network traffic to be made without interrupting the flow of data on the network. A passive TAP uses an inductor to duplicate the signal to a monitor port, enabling monitoring and analysis without impacting network performance or requiring power to operate. SMF refers to a type of fiber optic cable that is used for long-distance data transmission, not as a device for monitoring or copying traffic. Similar to SMF, MMF is a type of fiber optic cable designed for shorter distances. It is not used for monitoring network traffic. An Active TAP also duplicates network traffic for monitoring but differs from a Passive TAP in that it requires power to operate and may amplify the signal. However, since the question specifies an "inductor" and implies no active interference, a Passive TAP is the better choice.

Related Content

5.3.9 Network Taps

resources\questions\q_net_cable_passive_tap.question.xml

Question 18 Correct

A technician is assisting the CISO in wirelessly transferring data between their smartwatch and their corporate PC. As the CISO's request uses two devices in close proximity, what network method has a limited range?

- Wi-Fi
- PAN ✓ Correct
- LAN
- WLAN

Explanation

A Personal Area Network (PAN) is designed for very short-range communication, typically within a few meters, and is commonly used for connecting personal devices like a smartwatch and a computer. Technologies like Bluetooth are often used in PANs to facilitate data transfer between devices in close proximity. While Wi-Fi can be used for wireless communication, it is generally intended for longer ranges than a PAN and often supports multiple devices over a broader area, not just close proximity connections. A Local Area Network (LAN) can include both wired and wireless connections within a building or office space. However, it covers a much larger area than a PAN and typically connects multiple devices over a more extended range. A Wireless Local Area Network (WLAN) is a subset of LAN and generally uses Wi-Fi to connect devices within a broader area, such as an office or building, rather than specifically enabling close-range communication between two personal devices.

Related Content

5.1.1 LANs and WANs

resources\questions\q_net_type_close_proximity_network.question.xml

Question 19

Correct

A network technician used a tool that energizes each wire in a cable. When the technician sent energy to some of the wires, the LED on the tool did not light up. What tool was the technician using?

- (●) Cable tester ✓ Correct
- ( ) Tone generator
- ( ) Toner probe
- ( ) Loopback plug

Explanation

A cable tester is a tool used to check the integrity and functionality of cables by sending a signal through each wire. If the LED on the tester does not light up for certain wires, it indicates a break or fault in those wires, meaning the cable is not transmitting signals properly. A toner probe is used in conjunction with a tone generator to trace cables through walls or ceilings. It does not test the functionality of each wire within a cable. A tone generator, used with a probe, helps locate cables by emitting a tone. It is not designed to test the individual wires in a cable for continuity or signal integrity. A loopback plug is used to test network ports and troubleshoot connectivity issues by reflecting signals back to the source. It is not used to check the integrity of each individual wire in a cable.

Related Content

5.3.8 Copper Cabling Test Tools

resources\questions\q_net_cable_cbl_tester.question.xml

Question 20

Correct

What is an example of a common PAN technology?

- Ethernet
- Bluetooth ✓ Correct
- Fiber optic
- Wi-Fi

Explanation

Bluetooth is commonly used in Personal Area Networks (PANs), connecting devices over a short range. Ethernet and fiber optic are more suited for LAN or WAN connections, while Wi-Fi is more common for wireless LANs, not PANs.

Related Content

5.1.1 LANs and WANs

resources\questions\q_net_type_pan_tech.question.xml