

Exam Report: 3.2.5 Practice Questions

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Time Spent: 7:43

Candidate: Garsteck, Matthew
Login: mGarsteck

Overall Performance

Your Score: 50%



Passing Score: 80%

View results by: ☐ Objective Analysis ☒ Individual Responses

Individual Responses

▼ Question 1: Incorrect

Which of the following best describes how a switch functions?

- ☒ ~~It connects multiple segments of different architectures. It translates frames and forwards them to the appropriate segment.~~
- ☐ It connects multiple segments of different architectures. It translates frames and broadcasts them to all of its ports.
- ☐ It connects multiple cable segments (or devices) and broadcasts frames to all of its ports.
- ➡ ☐ It connects multiple cable segments (or devices) and forwards frames to the appropriate segment.

Explanation

Switches have multiple ports and can connect multiple segments or devices. The switch forwards frames to the appropriate port. They function similarly to a hub, except instead of sending packets to all ports, switches send packets only to the destination computer's port.

References

LabSim for Network Pro, Section 3.2.
[netpro18v5_all_questions_en.exm NP05_1-6 #108]

▼ Question 2: Correct

How do switches and bridges learn where devices are located on a network?

- ☐ When a frame enters a port, the destination IP address is copied from the frame header.
- ➡ ☒ When a frame enters a port, the source MAC address is copied from the frame header.
- ☐ When a frame enters a port, the destination MAC address is copied from frame header.
- ☐ When a frame enters a port, the source IP address is copied from the frame header.

Explanation

Bridges and switches learn addresses by copying the MAC address of the source device and placing it into the MAC address table. The port number that the frame entered is also recorded in the table and associated with the source MAC address.

The switch or the bridge cannot record the destination MAC address because it does not know the port that is used to reach the destination device. Bridges and switches operate at Layer 2 and do not use IP addresses (which exist at Layer 3).

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_1-6 #277]

▼ Question 3: Correct

An eight-port switch receives a frame on port number 1. The frame is addressed to an unknown device. What will the switch do?

- ☐ Drop the frame.
- ➡ ☒ Send the frame out ports two through eight.
- ☐ Send the frame out all eight ports.
- ☐ Send the frame out the destination port.

Explanation

Because the switch does not know the port that is used to reach the destination device, it will send the frame out all ports except for the port on which the frame was received. After the switch learns the port that is used to reach the destination device, it will send the frame out only that port.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_1-6 #285]

▼ Question 4: Correct

Which of the following devices does not segment the network?

- ➡ ☒ Hub
- ☐ Firewall
- ☐ Router
- ☐ Switch

Explanation

A hub does not create multiple segments on the network. A segment is a portion of the network that has different media, collision domains, or broadcast domains. A hub simply connects devices using the same media type. All devices are members of the same collision and broadcast domains.

On a switch, each switch port is in a separate collision domain. With a router or a firewall, each connected network is a different broadcast domain.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP09_3-1 #4]

▼ Question 5: Correct

Which of the following hardware devices regenerates a signal out all connected ports without examining the frame or packet contents? (Select two.)

- ☐ Bridge
- ☐ Gateway
- ☐ Router

☐ Switch ☒ Hub ☒ Repeater

Explanation

A hub and a repeater send received signals out all other ports. These devices do not examine the frame or the packet contents.

Switches and bridges use the MAC address in a frame for forwarding decisions. A router uses the IP address in a packet for forwarding decisions.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_1-6 #179]

▼ Question 6: Incorrect

At which OSI layer does a router operate to forward network messages?

☐ Session☒ ~~Data Link~~☐ Physical☐ Transport ☐ Network

Explanation

A router uses the logical network address specified at the Network layer to forward messages to the appropriate LAN segment. A bridge, on the other hand, uses the MAC address and works at the Data Link layer.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_2-3 #17]

▼ Question 7: Correct

Your company purchases a new bridge that filters packets based on the MAC address of the destination computer. On which layer of the OSI model is this device functioning?

☐ Presentation☐ Transport ☒ Data Link☐ Session

Explanation

The bridge is operating at the Data Link layer.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_2-3 #58]

▼ Question 8: Incorrect

At which of the following OSI layers does a router operate?

- ☐ Layer 1
- ☒ Layer 2
- ➔ ☐ Layer 3
- ☐ Layer 4

Explanation

A router operates at Layer 3, or the Network layer.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_2-3 #50]

▼ Question 9: Incorrect

Which of the following devices operate at the Data Link layer of the OSI model? (Select three.)

- ➔ ☐ Bridges
- ☐ Routers
- ➔ ☒ Switches
- ☒ Hubs
- ➔ ☐ Network interface cards (NICs)
- ☒ Repeaters

Explanation

Network interface cards (NICs), bridges, and switches all operate at the OSI Data Link layer. They use the physical device address (MAC address) to identify packets. Hubs and repeaters operate at the Physical layer--they simply repeat packets without regard to addresses. Routers function at the Network layer--they examine the logical device and network address to perform routing tasks.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_2-3 #7]

▼ Question 10: Incorrect

Which of the following devices operate at OSI model Layer 2? (Select two.)

- ☒ Hub
- ☐ Router
- ➔ ☐ Network interface card
- ➔ ☒ Switch
- ☐ Repeater
- ☐ Firewall

Explanation

A network interface card and a switch operate at Layer 2 (Data Link) of the OSI model. Layer 2 includes protocols that define the MAC address. The MAC address is burned into the network interface card, and a switch uses the MAC address to make forwarding decisions.

A hub or a repeater operate at Layer 1; they regenerate a signal without looking at Layer 2 or Layer 3 information. A router operates at Layer 3, using the IP address to make forwarding decisions. A firewall operates at Layer 3 or higher, using packet or data contents to make filtering decisions.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP09_3-1 #2]

▼ Question 11: Correct

A switch is associated with which OSI model layer?

- ➡ ☒ Data Link
- ☐ Transport
- ☐ Network
- ☐ Physical

Explanation

Switches are associated with the Data Link layer of the OSI model. Switches examine the device address in the packet and forward messages directly to that device.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_2-3 #26]

▼ Question 12: Incorrect

At which layer of the OSI model do hubs operate?

- ➡ ☐ Physical
- ☒ Layer 3
- ☐ Data Link
- ☐ Internet

Explanation

Hubs operate at Layer 1, or the Physical layer of the OSI model.

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP05_2-3 #42]

▼ Question 13: Correct

Which of the following devices operates at the OSI model Layer 2?

- ☐ Router
- ➡ ☒ Switch
- ☐ Hub

☐ Firewall

Explanation

A switch operates at the OSI model Layer 2 (Data Link layer). It reads the MAC address to make frame forwarding decisions.

A hub operates at OSI model Layer 1 (Physical layer), while a router and a firewall operate at OSI model Layer 3 (Network layer).

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP09_4-1 #MCS2]

▼ Question 14: Incorrect

Which of the following devices operates at the OSI model Layer 1?

☐ Switch

☐ Firewall

☒ ~~Router~~

➡ ☐ Hub

Explanation

A hub operates at OSI model Layer 1 (Physical layer). It regenerates electrical signals and sends those signals out all hub ports without regard to the upper-layer data.

A switch operates at the OSI model Layer 2 (Data Link layer). It reads the MAC address to make frame forwarding decisions. A router and a firewall operate at OSI model Layer 3 (Network layer).

References

LabSim for Network Pro, Section 3.2.

[netpro18v5_all_questions_en.exm NP09_4-1 #MCS3]