Exam Report: 11.5.4 Practice Questions

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## Overall Performance

Your Score: 22%

Passing Score: 80%

View results by: ◯ Objective Analysis   ⦿ Individual Responses

## Individual Responses

▼ **Question 1:**                    Incorrect

You are troubleshooting physical layer issues with the Gi0/1 interface in a router. You need to view and analyze the number of collisions detected on the interface.

Which command should you use?

◯ show interfaces gi0/1 description

➡ ◯ show interfaces gi0/1

◯ show controllers gi0/1

⦿ ~~show interfaces gi0/1 status~~

## Explanation

The **show interfaces gi0/1** command displays statistics about the Gi0/1 interface, including the number of collisions and late collisions.

The **show interfaces gi0/1 status** command displays summary information about the interface status. The output displays the port, name, status, VLAN assignment, duplex configuration, interface speed, and link type. The **show interfaces gi0/1 description** command displays the line and protocol status of the interface. The **show controllers** command is used to display configuration parameters for serial interfaces (not Ethernet interfaces), such as the type of serial cable and which end of the cable is connected to the device (DCE or DTE).

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_01]

▼ **Question 2:**                    Incorrect

You are troubleshooting physical layer issues with the Gi0/1 interface in a router. You suspect that a duplex mismatch error has occurred, and you need to determine the duplex settings configured on the interface.

Which commands could you use? (Choose two. Each response is a complete solution.)

☐ show interfaces counters

➡ ☑ show interfaces gi0/1 status

☐ show interfaces gi0/1 description

☐ show controllers gi0/1

➡️ ☐ show interfaces gi0/1

## Explanation

Both the **show interfaces gi0/1** command and the **show interfaces gi0/1 status** command display configuration information for the Gi0/1 interface, including the duplex configuration. Using this information, you can identify duplex mismatch errors.

The **show interfaces gi0/1 description** command displays the line and protocol status of the interface. The **show controllers** command is used to display configuration parameters for serial interfaces (not Ethernet interfaces), such as the type of serial cable and which end of the cable is connected to the device (DCE or DTE). The **show interfaces counters** command displays the traffic on the physical interface.

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_02]

▼ **Question 3:**          <u>Correct</u>

📘 This question includes an image to help you answer the question.          [ **Close** ]

```
switch2# show interfaces fa0/1
FastEthernet0/13 is up, line protocol is up (connected)
   Hardware is Fast Ethernet, address is c0c1.c09b.acf5 (bia c0c1.c09b.acf5)
   MTU 1500 bytes, BW 100000 Kbit/sec, DLY 100 usec,
       reliability 255/255, txload 1/255, rxload 1/255
   Encapsulation ARPA, loopback not set
   Keepalive set (10 sec)
   Half-duplex, 100Mb/s, media type is 10/100BaseTX
   input flow-control is off, output flow-control is unsupported
   ARP type: ARPA, ARP Timeout 04:00:00
   Last input never, output 00:00:01, output hang never
   Last clearing of "show interface" counters never
   Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
   Queueing strategy: fifo
   Output queue: 0/40 (size/max)
   5 minute input rate 0 bits/sec, 0 packets/sec
   5 minute output rate 0 bits/sec, 0 packets/sec
      12347 packets input, 853952 bytes, 0 no buffer
      Received 7244 broadcasts (234 multicasts)
      154 runts, 0 giants, 0 throttles
      0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
      0 watchdog, 234 multicast, 0 pause input
      0 input packets with dribble condition detected
      40733 packets output, 3197652 bytes, 0 underruns
      0 output errors, 1015 collisions, 2 interface resets
      0 unknown protocol drops
      0 babbles, 113 late collision, 0 deferred
      0 lost carrier, 0 no carrier, 0 pause output
      0 output buffer failures, 0 output buffers swapped out
```

Review the output from the show interfaces fa0/1 command on the switch2 switch in the exhibit.

What is wrong with the fa0/1 interface in this example?

➡️ 🔘 A duplex mismatch exists with the device on the other end of the connection.

⚪ The line status is administratively down.

⚪ The protocol status is down.

⚪ The cable connecting the fa0/1 interface with the device on the other end is a straight-through cable, but needs to be crossed-over.

## Explanation

In this example, the following statistics indicate that a duplex mismatch error has occurred:

- Duplexing is set to half.
- There are a significant number of runts.
- There are a significant number of collisions.
- There are a significant number of late collisions.
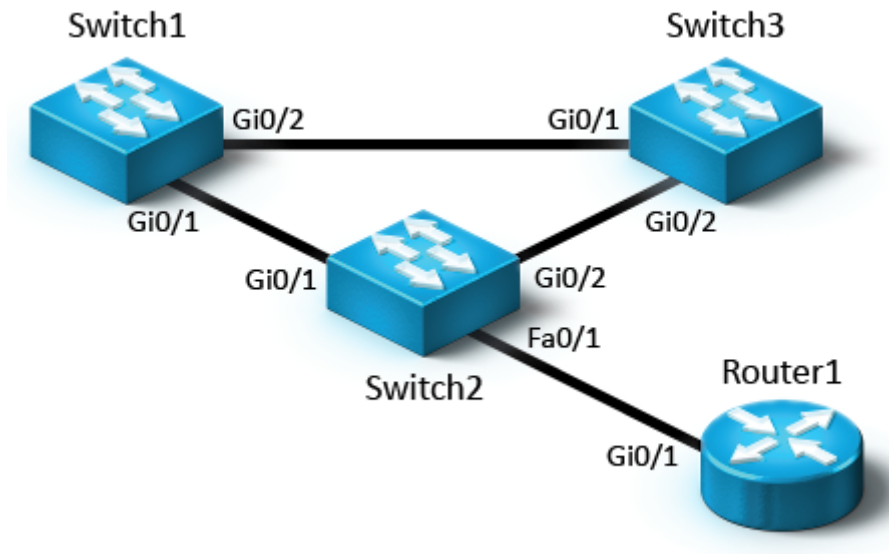
## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_03]

▼ **Question 4:**               Incorrect

This question includes an image to help you answer the question.        Close



Consider the network shown in the exhibit.

When you run the **show interfaces** command on switch1, you observe a significant number of runts on the Gi0/1 interface.

What does this statistic indicate?

○ The cable connected to this interface is a cross-over cable, but it should be a straight-through cable.

○ There is EMI or cross-talk on the cable connected to this interface that is corrupting frames.

➡ ○ Collisions are occurring.

◉ ~~The cable connected to this interface is a straight-through cable, but it should be a cross-over cable.~~

## Explanation

Runts are frames that are too small. (The minimum frame size required is 64 bytes.) This is commonly caused by collisions. In this scenario, the collisions are probably caused by a duplex mismatch error.

EMI or cross-talk on UTP cabling usually causes CRC errors. Using the wrong type of cabling would cause the connection to go down.

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_04]

**Question 5:**                    Incorrect

You are reviewing the output of the **show interfaces** command for the Gi0/1 interface on a switch. You notice a significant number of CRC errors displayed.

What are the most likely causes? (Select two. Each response is a complete solution.)

- ☐ The cable connected to this interface is a cross-over cable, but should be a straight-through cable.

➡️ ☐ Collisions.

- ☐ The cable connected to this interface is a straight-through cable, but should be a cross-over cable.

➡️ ☑ EMI or cross-talk on the cable connected to the interface.

- ☐ The device on the other end of the cable is powered off or the other interface is administratively shutdown.

## Explanation

CRC errors are received frames that did not pass the FCS check. These are usually caused by collisions, but they can also be caused by EMI or cross-talk on UTP cabling. All of these conditions can damage frames on the wire, causing a CRC error.

Using the wrong type of cabling would cause the link to go down. A disabled interface on the other end of the cable would also cause the link to go down.

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_05]

**Question 6:**                    Incorrect

A workstation is connected to a switch on the Gi 0/2 interface using a straight-through cable. The Ethernet interface in the workstation has been manually configured to use a 100 Mbps link speed in full-duplex mode.

Which of the following are true in this scenario? (Select three.)

- ☐ The switch interface will display as administratively down.

➡️ ☐ The switch attempts to sense the link speed. If it can't, the slowest link speed supported on the interface is selected.

➡️ ☑ If the link speed is 1000 Mbps or faster, full-duplex is used.

- ☐ If the link speed is 1000 Mbps or faster, half-duplex is used.

- ☐ If the link speed is 10 Mbps or 100 Mbps, full-duplex is used.

➡️ ☐ If the link speed is 10 Mbps or 100 Mbps, half-duplex is used.

## Explanation

By default, the link speed and duplex configuration for Ethernet interfaces in Cisco devices are set using IEEE 802.3u auto-negotiation. The interface negotiates with remote devices to determine the correct settings. However, auto-negotiation can be disabled on the Cisco device and/or other Ethernet network hosts. When this happens, devices with auto-negotiation enabled try to negotiate link speed and duplexing, but get no response. When auto-negotiation fails, Cisco devices that have auto-negotiation enabled default to the following:

- • If possible, the interface attempts to sense the link speed. If this is not possible, the slowest link speed supported on the interface is used, which is usually 10 Mbps.

   • If the selected link speed is 10 Mbps or 100 Mbps, then half-duplex is used. If it is 1000
   Mbps or faster, then full-duplex is used.

In this situation, link speed and duplex mismatches are likely to occur between network
devices on the same link. When this happens, the link will probably be established and the
interface will be in an up/up state, but it will perform very poorly.
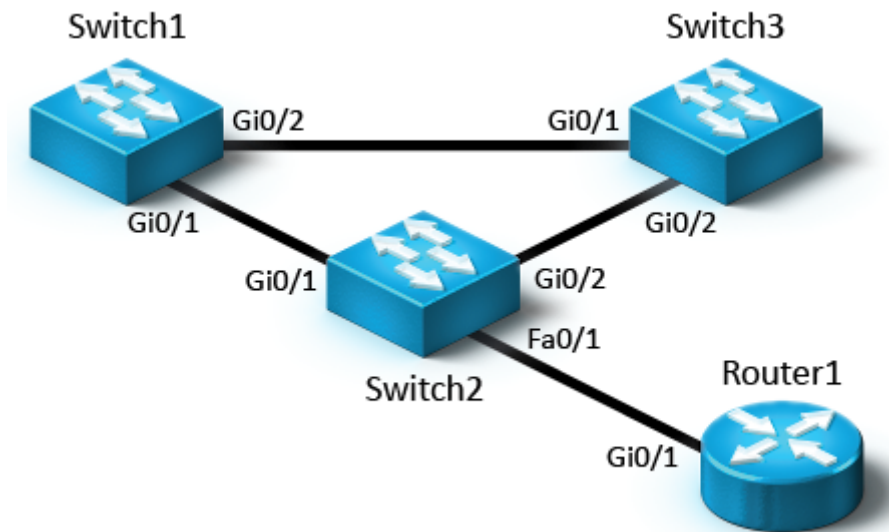
## References
LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_07]

▼ **Question 7:**                    Incorrect



This question includes an image to help you answer the question.                    Close

Consider the network shown in the exhibit.

You have been experiencing intermittent connectivity issues with switch2. To check the status of
the interfaces, you run the following commands:

switch2# show interfaces fa0/1 status
Port Name Status Vlan Duplex Speed Type
Fa0/1 connected 3 a-half a-100 10/100BaseTX

switch2# show interfaces Gi0/1 status
Port Name Status Vlan Duplex Speed Type
Gi0/1 connected trunk a-full a-1000 1000BaseTX

switch2# show interfaces Gi0/2 status
Port Name Status Vlan Duplex Speed Type
Gi0/2 connected trunk a-full a-1000 1000BaseTX

What is the issue with this network?

  ◉  ~~There is a duplex mismatch on the Gi0/2 interface.~~

  ○  The device connected to the Gi0/1 interface has auto-negotiation disabled.

  ○  There is a link speed mismatch on the Gi0/2 interface.

➡  ○  The device connected to the Fa0/1 interface has auto-negotiation disabled.

  ○  There is a link speed mismatch on the Gi0/1 interface.

## Explanation

A duplex mismatch probably exists on the Fa0/1 interface. Note that duplexing has been automatically set to half, which is the default behavior for Cisco devices when auto-negotiation fails. To fix the issue, check the Gi0/1 interface on router1 to see if auto-negotiation has been disabled. You could manually configure the Fa0/1 interface on switch2 to use the same duplexing and link speed settings as the interface on the router, or you could re-enable auto-negotiation on the router interface.

The Gi0/1 and Gi0/2 interfaces on switch2 appear to be functioning correctly with full duplexing and full link speed automatically configured.

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm *NP15_WAN_TROUBLESHOOTING_08]

▼ **Question 8:**            Incorrect

Your organization recently opened a branch office in a remote area. Because of its location, traditional WAN connectivity was not available, so you contracted with a satellite provider to connect the branch office network to your home office network.

Recently, your CEO conducted a video conference with the employees at the branch office. The employees complained that the video was choppy and the audio was frequently out of sync with the video.

What is the most likely cause of this poor WAN performance?

➡ ◯ There is latency on the WAN link.

◯ The WAN interface on the router at the branch office has been disabled.

◯ There is a data link encapsulation protocol mismatch between the WAN interfaces on both ends of the link.

◯ There is an authentication misconfiguration issue between the WAN interfaces on both ends of the link.

⊙ ~~There is an IP address misconfiguration issue between the WAN interfaces on both ends of the link.~~

## Explanation

In this scenario, its very likely that the satellite link itself is the cause of the problem. Because the radio signals used by satellite links must travel thousands of miles into space and back, several milliseconds of latency are introduced. For some types of network communications, such as saving a file or sending an email, this latency is not a problem. However, for time-sensitive communications such as a video conference, the latency inherent in the satellite link can cause poor network performance.

Because connectivity exists between the home and branch office networks, the following are very unlikely to be the cause of the problem:

- A disabled WAN interface
- A protocol mismatch
- An authentication mismatch
- An IP address misconfiguration

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm RT NP15_4.8-1]

▼ **Question 9:**            Correct

Your organization recently opened a branch office. You contracted with a WAN service provider to connect the branch office network to your home office network.

Recently, your CEO conducted a video conference with the employees at the branch office. The employees complained that the video was choppy and the audio was frequently out of sync with the video.

What is the most likely cause of this poor WAN performance?

○ The WAN interface on the router at the branch office has been disabled.

○ There is an IP address misconfiguration issue between the WAN interfaces on both ends of the link.

➡ ◉ The WAN provider is throttling bandwidth on the link.

○ There is a data link encapsulation protocol mismatch between the WAN interfaces on both ends of the link.

○ There is an authentication misconfiguration issue between the WAN interfaces on both ends of the link.

## Explanation

In this scenario, its possible that the WAN service provider is the cause of the problem. You should check the contract with the service provider to make sure they aren't throttling the bandwidth of the WAN link. It's not uncommon for service providers to impose bandwidth or utilization caps that could be hampering communications.

Because connectivity exists between the home and branch office networks in this scenario, the following are very unlikely to be the cause of the problem:

- A disabled WAN interface
- A protocol mismatch
- An authentication mismatch
- An IP address misconfiguration

## References

LabSim for Network Pro, Section 11.5.
[netpro18v5_all_questions_en.exm RT NP15_4.8-7]