The Five-Layer Network Model

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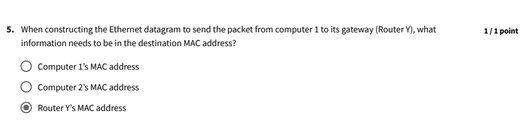
Use the following scenario to answer the questions below:

You have 3 networks (A, B, and C) and 2 routers (Y and Z).

Network A has an address space of 10.1.1.0/24 and is connected to router Y, using the interface 10.1.1.1.

Network B has an address space of 192.168.1.0/24 and is connected to Router Y, using the interface 192.168.1.254. Network B is also connected with router Z, using the interface of 192.168.1.1.

Network C has an address space of 172.16.1.0/24 and is connected to router Z, using the interface 172.16.1.1. The diagram below represents these connections and interfaces.



Network A
Address space:
10.1.1.0/24.

Network B
Address space:
192.168.1.0/24

Network C
Address space:
172.16.1.0/24.

1. Computer 1 on network B, with IP address of 192.168.1.233, wants to send a packet to Computer 2, with IP address of 10.1.1.205. On which network is computer 2? **1 / 1 point**

- Network B
- Network C
- Network A
- Not present

Correct

2. What information is computer 1 looking at in the ARP table on Router Y? **1 / 1 point**

- MAC address
- Destination MAC address
- TTL value
- Port number

Correct

3. If it's a TCP connection, which is the first segment that computer 1 needs to build? **1 / 1 point**

- TCP segment
- IP datagram
- handshake
- Ethernet frame

Correct

4. What information is in the data payload for the IP datagram? **1 / 1 point**

- The ARP discovery request
- TCP segment
- Network B address space
- ART table

Correct

5. When constructing the Ethernet datagram to send the packet from computer 1 to its gateway (Router Y), what information needs to be in the destination MAC address? **1 / 1 point**

- Computer 1's MAC address
- Computer 2's MAC address
- Router Y's MAC address
- Router Z's MAC address

Correct

6. Computer 1 on Network A sends a packet to Computer 2 on Network C. What's the first step that Router Z does after receiving the Ethernet frame? **1 / 1 point**

- Sends an ARP broadcast message
- Increases the TTL by one
- Calculates a checksum and compares this checksum with the one in the Ethernet frame header
- Checks the destination IP address and changes it to its own

Correct

7. Computer 1 on network A, with IP address of 10.1.1.10, wants to send a packet to Computer 2, with IP address of 192.168.1.14. If the TTL value was set to 64 at the beginning, what is the value of the TTL once it reaches its destination? **1 / 1 point**

- 61
- 0
- 63
- 65

Correct

8. Computer 1 on network B, with IP address of 192.168.1.121, wants to send a packet to Computer 2, with IP address of 10.1.1.8. Taking in consideration that computer 1 is sending a request to a web server on computer 2, listening on port 80, and the source port on computer 1 is 5000, which of the following contains the correct information for the first TCP segment of data? **1 / 1 point**

- Source Port: 80
  Destination Port: 5000
  Sequence Number: 1
  Acknowledgment Number: 1
- Source Port: 5000
  Destination Port: 80
  Sequence Number: 1
  Acknowledgment Number: 2
- Source Port: 80
  Destination Port: 5000
  Sequence Number: 1
  Acknowledgment Number: 2
- Source Port: 8081
  Destination Port: 50
  Sequence Number: 4
  Acknowledgment Number: 1

Correct

9. Computer 1 on network B, with IP address of 192.168.1.121, wants to send a packet to Computer 2, with IP address of 172.16.1.57. Which of the following has the correct IP datagram information for the fields: Version, minimum Header Length, Source IP, and Destination IP? **1 / 1 point**

- Version: 4
  Header Length: 32
  Source IP Address: 10.1.1.1
  Destination IP address: 172.16.1.1
- Version: 6
  Header Length: 20
  Source IP Address: 8a:1a:2b:3c:4d:5f
  Destination IP address: 2a:2b:3c:4d:8f
- Version: 5
  Header Length: 16
  Source IP Address: 10.1.1.0/24.
  Destination IP address: 10.1.1.0/23.
- Version: 4
  Header Length: 20
  Source IP Address: 192.168.1.121
  Destination IP address: 172.16.1.57

Correct

10. When referring to RJ45, we are referring to _____. **1 / 1 point**

- ethernet port
- network identification
- router velocity
- cable plug

Correct