

<input type="checkbox"/> 0					
<input type="checkbox"/> 1					
<input type="checkbox"/> 2					
<input type="checkbox"/> 3					
<input type="checkbox"/> 4					
<input type="checkbox"/> 5					
<input type="checkbox"/> 6					
<input type="checkbox"/> 7					
<input type="checkbox"/> 8					
<input type="checkbox"/> 9					

**Grading:**

For each question there is exactly one correct answer.

If the good answer and only the good answer box is crossed  $\Rightarrow +1$  point. If one bad answer box is crossed and no other box is crossed  $\Rightarrow -\frac{1}{n-1}$  point, where  $n$  is the number of possible answers. If 0 or more than 1 answer box is crossed  $\Rightarrow +0$  point.

← Please encode your SCIPER number here and write your full name in the box below. ↓

Name, First Name:

.....

**Question 1** Elaine is at home in Lausanne behind a NAT; her local area network uses addresses in the range 192.168.0.0 to 192.168.0.255. Elaine receives an IP packet from a web server in California.

- |  |   |
|--|---|
| <input type="checkbox"/> There is no source IP address in the received IP packet         | <input type="checkbox"/> The source IP address is the public IP address of Elaine's NAT     |
| <input checked="" type="checkbox"/> The source IP address is the web server's IP address | <input type="checkbox"/> The source IP address is in the range 192.168.0.0 to 192.168.0.255 |

**Question 2** Joe, at EPFL, sends a ping to Elaine's computer at ETHZ. They don't use VPN. Joe observes the packets created by this activity at his computer. In the packets sent by Joe:

- |   |   |
|---|---|
| <input type="checkbox"/> The destination MAC address is the MAC address of Elaine's default gateway         | <input type="checkbox"/> The destination MAC address is the MAC address of Joe's DNS server |
| <input checked="" type="checkbox"/> The destination MAC address is the MAC address of Joe's default gateway | <input type="checkbox"/> The destination MAC address is Elaine's MAC address                |

**Question 3** We are in a network where all hosts have subnet mask 255.255.254.0. The IP address of A is 10.1.0.1, the IP address of B is 10.1.1.1 and the IP address of C is 10.1.2.1

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> B is in the same subnet as A (and C is not) | <input type="checkbox"/> B and C both are in the same subnet as A    |
| <input type="checkbox"/> C is in the same subnet as A (and B is not)            | <input type="checkbox"/> Neither B nor C are in the same subnet as A |

**Question 4**

- |   |   |
|---|---|
| <input type="checkbox"/> both TCP and UDP repair packet losses              | <input type="checkbox"/> neither TCP nor UDP repair packet losses |
| <input checked="" type="checkbox"/> TCP repairs packet losses, UDP does not | <input type="checkbox"/> UDP repairs packet losses, TCP does not  |

**Question 5**

- |  |   |
|--|---|
| <input type="checkbox"/> The string 128:178:151:200::1 is a valid format neither for an IPv4 address nor for an IPv6 address | <input type="checkbox"/> The string 128:178:151:200::1 is a valid format both for an IPv4 address and for an IPv6 address           |
| <input type="checkbox"/> The string 128:178:151:200::1 is a valid format for an IPv4 address but not for an IPv6 address     | <input checked="" type="checkbox"/> The string 128:178:151:200::1 is a valid format for an IPv6 address but not for an IPv4 address |

**Question 6** We upgrade a cable from 1Gb/s to 10 Gb/s.

- The propagation times are divided by 10, but the transmission times remain the same.
- The transmission times are divided by 10, but the propagation times are multiplied by 10.
- The transmission times are divided by 10, but the propagation times remain the same.
- Transmission and propagation times remain the same.

**Question 7** A web browser sends a request to a web server; with Wireshark we observe the packets created by this activity. The DNS name of the web server...

- is not present in IP headers of packets sent by the web browser to the web server
- is present in the IP headers of packets sent by the web browser to the web server when both systems are not in the same subnet
- is present in the IP headers of packets sent by the web server to the web browser
- is present in the IP headers of packets sent by the web browser to the web server

**Question 8** The routing table at  $R$  is

Dest	Next Hop	Interface
2000::/16	2001:3:4:5::1	eth1
2000:1999::/32	2001:3:4:5::2	eth2
2000::/4	2001:3:4:5::3	eth3

$R$  has a packet to forward with IP destination address equal to 2000:2000:1:2:3::1.

- The packet must be forwarded to interface eth2
- The packet must be forwarded to interface eth1
- The packet must be forwarded to interface eth3
- The packet can be forwarded to eth1 or to eth3

**Question 9** A web server sends a file to a web client...

- TCP is active in the web browser and server but not in intermediate routers
- TCP is active in the web browser and server and in the routers that are not directly connected to the web server or the web browser
- TCP is active in the web browser and server and in all intermediate routers
- TCP is active in the web browser and server and in the routers that are close to the web server and the web browser

**Question 10** Joe, at EPFL, sends a ping to Elaine's computer at ETHZ. They don't use VPN. Joe observes the packets created by this activity at his computer. In the packets sent by Joe:

- The destination IP address is Elaine's IP address
- The destination IP address is the IP address of Joe's DNS server
- The destination IP address is the IP address of Elaine's default gateway
- The destination IP address is the IP address of Joe's default gateway