

## TCP/IP Networking, 2019, Quiz 1

Use the separate answer sheet to return your answers. Do not return this sheet. We recommend that you first write your tentative answers on this sheet. In a second phase, when you are certain about your answers, you can mark them on the answer sheet.

For each question there is exactly one correct answer. If the good answer and only the good answer box is marked  $\Rightarrow +1$  point. If one bad answer box is marked and no other box is marked  $\Rightarrow -\frac{1}{3}$  point. If 0 or more than 1 answer box is marked  $\Rightarrow 0$  point.

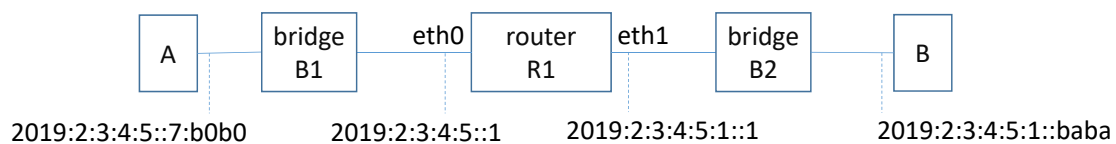
**Question 1** A router has four interfaces, called eth0 to eth3. Its routing table is shown below.

destination address	destination interface	next-hop
::/0	eth0	...
2019:2:3::/48	eth1	...
2019:2:3:4:5::/80	eth2	...
2019:2:3:4:5::/96	eth3	...

The router receives an IP packet with destination address 2019:2:3:4:5::1. To which interface does the router send this packet ?

- eth3       eth2       eth0       eth1

**Question 2** The length of the subnet prefix is the same at all IP interfaces shown on the figure. A valid length (in bits) is...

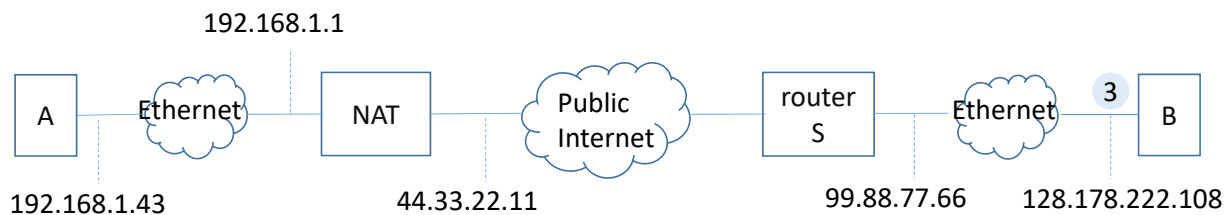


- A 80  
 B 128  
 C 64  
 96

**Question 3** We replace an Ethernet cable at 1 Gb/s by an Ethernet cable at 10 Gb/s.

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

**Question 4** At point 3, a packet sniffer observes one IP packet sent by A to B. What is the IP source address contained in the IP packet header ?



- A 99.88.77.66
- B 192.168.1.1
- C 44.33.22.11
- D 128.178.222.108

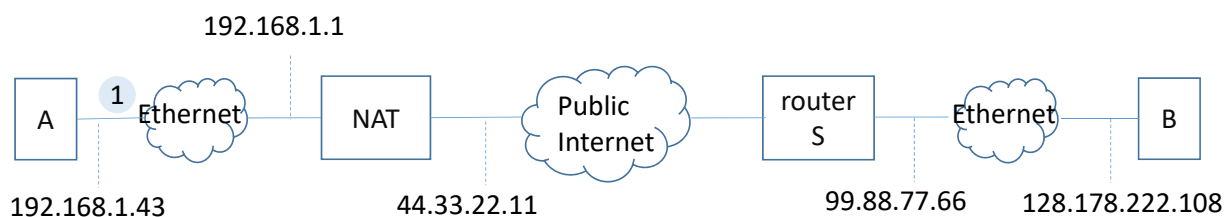
**Question 5** What is the uncompressed notation for the IPv6 address 2019:2:3:4:5::1?

- A None, because the proposed address is invalid.
- B 2019:0002:0003:0004:0005:0000:0000:0001
- C 2019:0002:0003:0004:0005:0000:0001
- D 2019:2:3:4:5:0:1

**Question 6** An application program at a computer A transfers a file to a computer B over the internet, using TCP. Some data is lost between intermediate routers.

- A The application program needs to handle the loss, for example by retransmitting the missing data.
- B The application program does not need to handle the loss, because TCP in A and B takes care of retransmitting the missing data.
- C The application program does not need to do anything special, the routers take care of retransmitting the missing data.
- D This scenario is not possible, packets are never lost between routers.

**Question 7** At point 1, a packet sniffer observes one IP packet sent by A to B. What is the IP destination address contained in the IP packet header ?

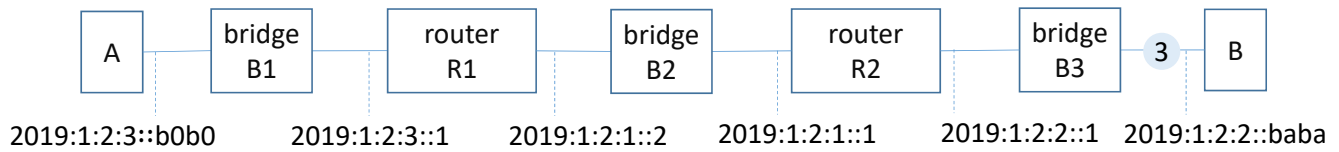


- A 192.168.1.1
- B 44.33.22.11
- C 99.88.77.66
- D 128.178.222.108

**Question 8** Elaine’s browser sends an HTTP request to a web server. With wireshark at the web server we observe the IP headers of the packets resulting from this activity.

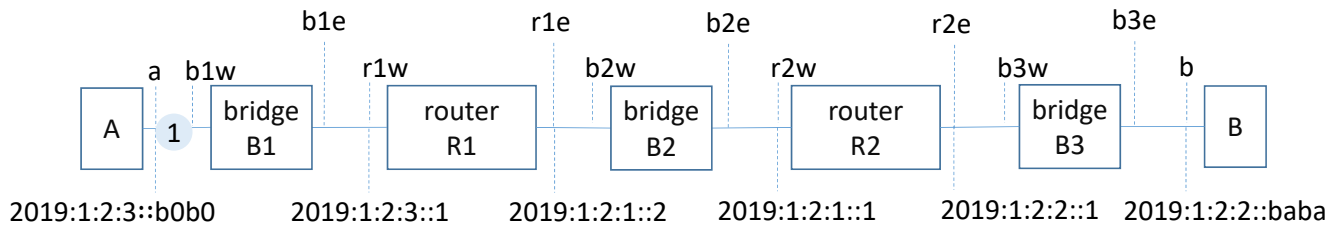
- A The IP headers contain the DNS name of the web server and of Elaine’s PC.
- B The IP headers do not contain any DNS name.
- C The IP headers contain the DNS names of the web server and of Elaine’s PC.
- D The IP headers contain the DNS name of Elaine’s PC.

**Question 9** At point 3, a packet sniffer observes one packet sent by A to B. What is the IP source address contained in the IP packet header ?



- A 2019:1:2:3::1
- B 2019:1:2:2::1
- C 2019:1:2:3::b0b0
- D 2019:1:2:1::2

**Question 10** At point 1, a packet sniffer observes one packet sent by A to B. MAC addresses are denoted with a, b1w, ..., b in the figure. What is the MAC destination address contained in the MAC layer packet header ?



- A b1w
- B b
- C b3w
- D r1w

CORRECTED

**TCP/IP Networking, 2019, Quiz 1**

This is the answer sheet: all answers are to be marked on this page to be taken into account. Do not return the other sheets.

To mark a box, please make it completely dark (a cross is not sufficient):

Do:

**Question 1:**  A  B  C  D

Don't:

**Question 1:**  A  B  C  D

0	0	0	0	0	0
1	1	1	1	1	1
2	2	2	2	2	2
3	3	3	3	3	3
4	4	4	4	4	4
5	5	5	5	5	5
6	6	6	6	6	6
7	7	7	7	7	7
8	8	8	8	8	8
9	9	9	9	9	9

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

Name, First Name: .....
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- 
- Question 1:  A  B  C  D
  - Question 2:  A  B  C  D
  - Question 3:  A  B  C  D
  - Question 4:  A  B  C  D
  - Question 5:  A  B  C  D
  - Question 6:  A  B  C  D
  - Question 7:  A  B  C  D
  - Question 8:  A  B  C  D
  - Question 9:  A  B  C  D
  - Question 10:  A  B  C  D

CORRECTED