This test has 15 questions totalling 15 points. Every three wrong test answers 1 point will be substracted. Only one option is correct. Calculators are not allowed. The duration of this exam is 20 minutes.

Regarding the ANSWER SHEET:

- *Fill in your personal data in the form above.*
- *Enter Computer Networks II in the field EVALUATION.*
- *Indicate your ID in the side box (also marking the corresponding cells).*
- *Check the box «3» in the TYPE OF EXAMINATION box.*

Check your answers only when you are completely sure. The scanner does not support corrections or deletions of any kind, will automatically cancel them. Debit only deliver the answer sheet.

1 [1p] Host A sends a segment to B including window=0. What will happen next?

- ☐ **a)** A notifies *keep alive* or *disconnection* timeout.
- ■ **b)** A will send a new segment with a different window size.
- ☐ **c)** B sets cwnd to half of ssthresh.
- ☐ **d)** A waits for new ACKs before to sent again.

2 [1p] What is the size of the sender congestion window?

- ☐ **a)** Larger than rwnd.
- ■ **b)** Lower or equal than rwnd.
- ☐ **c)** Equal to the sender buffer size.
- ☐ **d)** Equal to the receiver buffer size.

3 [1p] What does *window* TCP header field mean?

- ☐ **a)** Payload length (in bytes) of the segment.
- ☐ **b)** Received segment payload length (in bytes).
- ■ **c)** Amount of data the receiver is willing to receive.
- ☐ **d)** Amount of data the sender is willing to receive.

4 [1p] Which of these TCP features is already in UDP?

- ☐ **a)** Connection and disconnection.
- ☐ **b)** Flow control.
- ■ **c)** Multiplexing.
- ☐ **d)** Lost data retransmission.

5 [1p] What is right in relation to flow control?

- ☐ **a)** Avoids network saturation.
- ☐ **b)** Avoids the output router queues get full.
- ☐ **c)** Identifies output interfaces on switches.
- ■ **d)** Avoids saturation for slow receivers.

6 [1p] Which parameters can NAPT modify?

- ☐ **a)** Destination IP only.
- ☐ **b)** Source and destination IP only.
- ☐ **c)** Destination port only.
- ■ **d)** Source and destination IP and source and destination ports.

7 [1p] What is the motivation to use NAT?

- ☐ **a)** To fix a bug in the TCP protocol.
- ☐ **b)** To fix a bug in the IP protocol.
- ■ **c)** Lack of public IP address.
- ☐ **d)** To simplify the length of the routes.

8 [1p] What is a tunnel?

- ☐ **a)** A place to drop packets.
- ☐ **b)** A network security vulnerability.
- ■ **c)** A way to encapsulate packets and forwards them to other place.
- ☐ **d)** A way to manage hidden traffic outside your network.

9 [1p] Which of the following is not a solution to the count-to-infinity problem?

☐ **a**) Define infinity

☐ **c**) Split horizon

■ **b**) Adding sequence numbers

☐ **d**) Split horizon and poison reverse

10 [1p] What problem solves hierarchical routing

■ **a**) Inefficiency due to the growth of the routing tables

☐ **b**) Selective sending to a group of nodes

☐ **c**) Calculation of longer routes

☐ **d**) Calculation of shortest routes

11 [1p] In link state-based routing, how the latency to neighbors is estimated?

☐ **a**) HELLO packets

☐ **c**) OSPF packets

■ **b**) ECHO packets

☐ **d**) RIP packets

12 [1p] Which of the next strategies is not oriented to save IP addresses?

☐ **a**) NAT

☐ **c**) Subnetting

☐ **b**) DHCP

■ **d**) Switching

13 [1p] What do you need to compute the address space of a given address block?

☐ **a**) The number of bits of the address

☐ **c**) The first address of the block

■ **b**) Any address of the block and the mask

☐ **d**) The mask

14 [1p] Which CIDR mask would you use if you have a mask 255.240.0.0?

■ **a**) /12

☐ **c**) /16

☐ **b**) /14

☐ **d**) /24

15 [1p] Which of the following protocols is not included into ICMPv6?

☐ **a**) ICMPv4

☐ **c**) IGMP

☐ **b**) ARP

■ **d**) RARP