

## Informatics 1, 1. Written Exam (2017-10-02)

1	2	3	4	5	6	7	8	9	10	11	12	$\Sigma$

*The answers should fit next to the questions, if you used a separate paper let us know clearly!*

1. Calculate the binary form of  $5.3!$  Mark the repeating part after the decimal point! (2 points)

2. Calculate the decimal form of this two's complement representation: 11101101 (2 points)

3. Calculate the decimal form of the number represented in IEEE 754 standard 32-bit form by: (2 points)

1 10000100 001001000000000000000000!

4. The unicode of the character Č is U+10C. Calculate the binary and the hexadecimal form of its UTF-8 code! (2 points)

5. Calculate the two's complement representation of  $-12$  on 8 bits! (2 points)

*Solve the following bash problems!*

**6.** Modify the permissions of the file `test1` through the console, so that we (the owners) can read, write and execute the file, our group can read and execute, and anybody else can't do anything with the file. Then delete the file.

*(2 points)*

**7.** The file `heights` contains the height of students in increasing order. Every line contains a student's full name and their height separated by a space. Using the console find the 5 shortest students named *Martha*.

*(2 points)*

*Answer the following questions!*

**8.** What is the difference between a primary and an extended partition?

*(1 points)*

**9.** What is a driver? (In one sentence.)

*(1 points)*

**10.** What is the difference between an HDD and an SSD?

*(1 points)*

**11.** What is machine code?

*(1 points)*

**12.** What are the contents of the memory after issuing these commands? (at the start every cell contains 0)

*(2 points)*

```
1 LOAD= 4
2 STORE 2
3 SUB= 3
4 STORE* 2
```