Informatics 1, 1^{st} midterm (2019-10-07)

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

1. Write $4\frac{2}{3}$ (4.666) in binary form, mark the repeating part in the fraction! (2 points)

2. Calculate the decimal form of the hexadecimal number 10AE. (1 points)

3. Calculate the two's complement representation of -96 on 8 bits. (2 points)

5. The Greek capital theta symbol (Θ) has the Unicode number U+03F4 (or 862 in decimal). Calculate its UTF-8 representation in both binary and hexadecimal! (2 points)

bash

6. Use the command ls to write the content of the current folder into the file myfile.txt (redirect). Compute how many of them contains the letter "m" (pipe)! (3 points)

regex

7. Which one of these strings match the following regex and which one doesn't (the whole word should match). (2 points)

 $\w{1,4}([aou])rk\1$

tarka torok tarokk tarkabarka szarka torka

Answer the following questions!

8.

a) What is the difference between HDD and SSD? (1 points)

b) What is the assembler? (1 points)

c) What is the CPU? (1 points)

d) Explain two of its parameters! (1 points)

9. What is the output after issuing these commands on a RAM machine? The memory is initially filled with zeros and the leftmost cell is the 0^{th} cell. (2 points)

- 1. LOAD= 2
- 2. STORE 3
- 3. ADD* 3
- 4. SUB= 1
- 5. STORE* 0
- 6. WRITE 5
- 7. HALT