Informatics 1, 1st midterm (2018-10-01)

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

1. Write 14.1 in binary form, mark the repeating part in the fraction! (2 points)

2. Calculate the decimal form of this two's complement representation: 0101 (on 4 bits). (2 points)

3. Calculate the two's complement representation of -120 on 8 bits. (2 points)

4. Calculate the IEEE 754 standard 32bit representation of 14.1 $\qquad \qquad (2\ points)$

5. The Hebrew symbol aleph (\aleph) has the Unicode number U+2135 (or 8501 in decimal). Calculate its UTF-8 representation in both binary and hexadecimal! (2 points)

bash

6. Use the command echo to write hello into the file myfile.txt (redirect). Make a directory called Hello and move the newly created file into that directory. (2 points)

regex

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

 $\w([abc])cs\1?$

kacsa macska kutya kacs macs kuty

Answer the following questions!

8.

- a) What is the difference between the mass storage and RAM? (1 points)
- b) What is assembly? (1 points)
- c) What does it mean that a processor is 2GHz fast? (1 points)
- d) How many byte is one GiByte (gibibyte)? (1 points)
- 9. What is the content of the memory after issuing these commands on a RAM machine? The memory is initially filled with zeros and the leftmost cell is the $0^{\rm th}$ cell. (2 points)
- 1. LOAD= 3
- 2. STORE* 0
- 3. SUB= 1
- 4. JGTZ 2
- 5. HALT