

Name	Signature	Student Id Nr	Points

581305-6 Computer Organization I, miniexam 2, 18.11.2019 (12 p)

Write your answer on this exam paper in the space given. Please notice, that the exam paper is 2-sided.

- a) [1 p] What are the 32-bit Little-Endian *sign-magnitude* representations for integer values +35 and -35?
- b) [1 p] What are the 64-bit Big-Endian *twos complement* representations for integer values +35 and -35?
- c) [1 p] What are the 8-bit *biased 127* representations for integer values +2 and -2?
- d) [1 p] What two advantages do you get, when the bias is specifically 127 with 8-bit biased representation?
- e) [2 p] What is the IEEE floating point standard normalized Big-Endian 32-bit representation of +5.75?

f) [2 p] What are the main tasks for operating system? What resources are managed in them?

g) [2 p] What is a process and what is it's presentation in the operating system?
What is processor context?

h) [2 p] The operating system wants to switch the process in execution every time when the executing process has used 20 ms CPU-time (in one turn to execute), even if the process would be able to continue the execution longer. How is this implemented in the system? As an example, use the case where the execution of process P is interrupted and process Q gets it's turn to execute. How is the process switch from process P to process Q implemented?