

- No calculator.
- Write / draw clearly!

- 1 Write a C-program corresponding to the assembly program below. Feel free to decide the names of the variables. (5p)

```
0x00000024:    B        0x40
0x00000028:    LDR     r3, [r11, #-8]
0x0000002C:    ADD     r3, r3, #1
0x00000030:    LDR     r2, [r11, #-0xc]
0x00000034:    ADD     r2, r2, #2
0x00000038:    SUB     r4, r3, r2
0x0000003C:    STR     r4, [r11, #-0x10]
0x00000040:    LDR     r2, [r11, #-0x14]
0x00000044:    LDR     r3, [r11, #-0x18]
0x00000048:    CMP     r3, r2
0x0000004C:    BLE     0x28
0x00000050:    ...
```

- 2 Explain the steps of the instruction fetch and execution of LDR r3, [r11, #- 8] in the previous program (one by one). (8p)
- 3 Explain the priority of interrupts and give an example how the user can manipulate it. (6p)
- 4 Explain
- a) Register bank (2p)
 - b) Instruction in immediate mode (2p)
 - c) Parallel port. (2p)
- 5 Explain the function call at the hardware/machine level. (5p)