

## 2110682 Embedded and real-time systems 2017

### final exam

(2 hours) do all the questions

1. Explain how the co-operating system works. What happens when one process crashes?
2. Design a program for this gadget. It has
  - a) a display showing 7 numbers
  - b) a numeric keyboard
  - c) a clock running

This gadget is a generic platform that can perform several tasks. Design a program that

- 1) when pressing a key it will show the current time.
- 2) when pressing a key it will continuously show the running time (as a stop watch).

Show your design as flowchart or pseudo code. Make it that your program runs in interrupt mode and save a lot of battery. You can assume that there are ports for those i/o. The clock must be a real-time process.

3. Pick up an embedded system communication standard and explain briefly that standard. What it does.
4. If you have a four-core processor, how would you use it to build the gadget in question 2? How you allocate and coordinate that program on mulicore chip?

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