SE Exam

December 18^{th}, 2019.

You can consult your lecture notes, including TDs and TPs, in paper form.

You will have to submit this page with your answers; please don't forget to write your anonymity number.

Anonymity number:

1 Questions

1. Select the name of the only CPU register that does not exist (the other two were discussed during the lectures):
   - ☐ `IP`
   - ☐ `F`
   - ☐ `int`
2. In modern computer machines, the caches L1, L2 and L3 are physically located
   - ☐ in the CPU
   - ☐ in the RAM
   - ☐ nowhere, as they are simulated by the virtual memory
3. In the dining philosophers example, there can be a deadlock situation when
   - ☐ philosopher 0 waits for all others to finish before asking for forks
   - ☐ philosophers with even identifiers do not ask for forks
   - ☐ all philosophers ask for the left-sided fork at the same time
4. The implementation of a `Semaphore` is said to be *fair* when
   - ☐ threads asking for more permits can acquire them with priority
   - ☐ the threads that are the first to ask are those which can acquire with priority
   - ☐ threads asking for less permits are always able to acquire with priority
5. Dekker's algorithm
   - ☐ allows for synchronizing two or more concurrent threads sharing common memory
   - ☐ is one possible implementation of `Semaphores` in Java
   - ☐ is equivalent to Peterson's algorithm, but requires the use of `Semaphores`
6. In the virtual memory page tables, the dirty bit indicates whether or not the page was
   - ☐ modified since its last copy from the hard disk
   - ☐ overwritten with another page, requested more recently by a program
   - ☐ already saved in the hard disk