

**Advanced Operating Systems and Virtualization**  
**September 21<sup>st</sup>, 2018**

**Name:** \_\_\_\_\_ **Surname:** \_\_\_\_\_ **Student ID:** \_\_\_\_\_

*Remember to write your correct personal data on this sheet, and use it as a folder to wrap the exposition. If you think a question is ambiguous, write your interpretation and answer accordingly. Ability to précis will be honoured.*

*You are not allowed to use any note or digital device. If you are found copying or consulting notes, you will not pass the written test.*

Consider the following C program executed on an x86 Linux system:

```
#include <stdlib.h>
#include <sys/mman.h>

int main(void) {
    char *p = mmap(NULL, 4096, PROT_READ|PROT_WRITE,
                  MAP_PRIVATE|MAP_ANONYMOUS, 0, 0);
    p[0] = 'x';
    return 0;
}
```

Describe what happens from when the program is launched to when it exits. You can ignore any asynchronous activity (e.g., scheduling or interrupt management) in the discussion.

I, the undersigned, according to the provisions of law N. 675/96, allow the professor to publish on the website the results of this written test.

Legible signature in full: \_\_\_\_\_