

Università degli studi “Roma Tre”

A.Y: 2021/2022

Teaching: Sistemi Operativi

Course: Ingegneria Informatica

Exam session: 26/01/2022

Lecturer: Romolo Marotta

Maximum score: 31 points

STUDENT ID _____ Last Name _____ First Name _____

It is recommended that you write your surname and name on this sheet and use it as a folder to contain the answer sheets. If you consider a question ambiguous, write down your interpretation and respond accordingly.

Question 1 (6 points)

Describe the concept of interrupt and show its usage in modern operating system..

Question 2 (6 points).

What are the evaluation criteria of a CPU scheduler?

Question 3 (9 points).

Show a scheme for paged segmentation with TLB and describe how it works for translating from logical to physical address.

Question 4 (10 points)

Write a C function with the following interface:

```
int above_threshold(char *filename, int n, int threshold).
```

This function must launch a number of threads / processes equal to n to read a sequence of ints from the binary file *filename* and count how many of these have a value greater than *threshold*. Finally, the function prints to standard output and returns the total number of int greater than *threshold* value contained in the file.

The publication of the result via Web will take place anonymously using the serial number. To have your exam grade published on the course website, you must sign the following authorization.

The undersigned, pursuant to law 675 of 31/12/96, authorizes the lecturer to publish the results of the exam on the bulletin board and / or on the Web. In faith

Legible signature: _____