

SURNAME: \_\_\_\_\_ NAME: \_\_\_\_\_

**DIRECTIONS FOR THE EXAM**

User: EC001, psw: labec

First of all, **check that your Raspberry works** by using the Full\_test.s program.

Then, download all the files that you want to use from your pendrive to the hard disc (after 5 minutes, no any further download will be permitted). Mobile phone is also prohibited for the exam.

After this, you can start with the exam. Create your programs in the folder d:/EC/RBPi

You have to make two independent programs. The name of the first one is your surname followed by 1 (first program) and followed by 2 for the second program. For example, if your surname is *Smith*, the name will be *Smith1.s* and *Smith2.s*. At the end of the exam, upload both programs to the virtual campus.

Once you finish the first exercise, please call me to assess your program (the same for the second program).

**EXAM:**

- 1) (First program) Write a program that performs the following tasks (up to 4 points):
  - a. Initially, turn on the two yellow leds (1 pt.)
  - b. After pressing button 1, the yellow leds will turn off and the green and red leds will turn on (+1.5 pts).
  - c. While you are pressing the push button 2, a 250 HZ sound is sent. Otherwise, if you do not press, the sound is not sent (+2.5 pts)
- 2) (Second program) Write a program that performs the following tasks (up to 5 points):
  - a. A sound of 1 kHz will be emitted just for 2 seconds (1 pt.)
  - b. After the sound is off, the leds should be ON-OFF in sequence starting from the red led every 200 ms. in an infinite loop (1 pt.)
  - c. If any button is pressed at AT ANY TIME, then all led will flash with the next cadence: 0.5 s. ON, 100 ms. OFF) (+3 pts).

To get the corresponding points, you have to do the exercises in order (for example, to get the 2.5 point of the section 1c. you have the sections 1b. working properly). In other words, you deliver one single program for exercise 1) and one single program for exercise 2 with the functionality in order (progressive)

*When you finish, upload your programs to the virtual campus. The name of each program is your "surname1.s" and your "surname2.s". For example, if your surname is Smith, the name will be Smith1.s and Smith 2.s*