# Answer Sheet

*This sheet should be printed out and handed in during the lab session. It can be completed either electronically or by hand.*

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| **Surname** | Da Silva | | **First name** | Bruno Luiz |
| **Student number** | | 150724708 | | |

## Questions from The Lab

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| **Section** | **Question** | **Answer** |
| **2.1 Activity 1** | Briefly describe what the two tasks ‘t\_led’ and ‘t\_button’ are used for. | To store the tasks id, which are the task identifiers for the scheduler |
| **2.1 Activity 1** | A third task is created for a short while; what is its purpose? | It is an idle task which is active while no thread/task is ready for execution |
| **2.1 Activity 1** | How long is the ‘tick’ period? How is this time configured? | The tick period is 10mS and is configured at a macro called OS\_TICK. This is the default value (#ifndef) |
| **2.3 Activity 3** | How quickly does the system respond to the button press? Explain briefly how this is achieved. | The system take 13.10uS. It is fast because it has a RTOS implemented, which have a scheduler instead of a manually made cyclic system |
| **2.3 Activity 3** | Explain what happens to the timing of the 3 sec period when the flashing restarts? | If you press the button in the middle of the 3sec period it will freeze the LED at the actual state and will wait the next button press. At the next button press, it restarts the led flashing with a 3 sec periods again (reset) |

## Viva Record

You should demonstrate the behaviour of the system in Activity 2.

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| **Section / Item** | **Initials / Date** | **Comment** |
| **Section 2.2 Button controlled flashing** |  |  |

## Question about concepts

Answer the following questions concisely:

1. What is the main capability provided by a simple RTOS such as ARM’s RTX? [***Between 10 and 30 words***]

Enable the implementation of multiple tasks simultaneously without have to worry too much about the scheduling, timing and maintenance issues of a cyclic system.

1. An embedded system needs to monitor multiple inputs and control multiple outputs at the same time. An engineer says ‘*there is no choice; we must use an RTOS*’. Explain whether you agree, giving your reasons. [***Between 15 and 30 words***]

It is not obligatory, as you can implement some cyclic system but, depending of the complexity of the system, a RTOS can simplify the work, removing obstacles from the project and leaving only the real problems to solve.

## Overall Feedback

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| **Marker** | **Date** | **Grade** |
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