escuela técnica superior de ingeniería y diseño industrial
UNIVERSIDAD POLITÉCNICA DE MADRID
ESCUELA TÉCNICA SUPERIOR DE INGENIERÍA Y DISEÑO INDSUTRIAL

Departamento Electrónica, Automática e Informática Industrial

SURNAME:

NAME :

Grade

COURSE: Practical IoT with Raspberry Pi

CURSO: Int_Semester **December 2019**

Total time: 1:30h
Personal notes and Internet are allowed

Exercise 1: MQTT (4 points)

A) [2,5 points] In a terminal, a program in Python will be executed that will send, using MQTT, a JSON that contains a string identifier (i.e. name) and a float value (i.e. 25,4). Use a topic like "ETSIDI/ID" and the broker that you want.

In another terminal, a Python program will obtain the values sent by the other terminal through MQTT and display them on the screen.

B) [1,5 points] In addition, a LED will light (for 2 sec) each time an MQTT message is received. If you want, you can use the Sense Hat LEDs.

Exercise 2: Altair SmartCore (3 points)

A) [2 points] Execute a program so that every 5s, a JSON with a float value (i.e. 20,2), and an id ("temp0"), are uploaded to your Altair SmartCore (Carriots) account.

B) [1 point] Modify the program to include the real temperature value from the board and the date and time (in any format). If you want, you can use the Sense Hat temperature.

Exercise 3: REST services with Flask (3 points)

Using Flask, develop a web method to read the accelerometer value (from the Sense Hat board). This method should be accessible from the browser.

Sense Hat info: https://pythonhosted.org/sense-hat/
Sense Hat API: https://pythonhosted.org/sense-hat/api/