IoT Application Programming

Example exam

Name	Surname	ID	CCL

1 points correct, 0 point no answer, -0.5 wrong answer
(minimum score on the coding part to pass the exam: 1 point)

The exam is composed of 2 parts:

- ***Multiple choice question part (8 points)***
- ***Coding part (4 points)***

Here you find an example of the multiple choice question part and two alternative examples of the coding part

MULTIPLE CHOICE QUESTIONS (8 Pts)

1. What is the main difference between GET and POST methods?
   - ○ Both can submit data but GET allows larger quantities of data
   - ○ GET requests data from a specified resource while POST submits data to be processed to a specified resource
   - ○ POST requests data from a specified resource while GET submits data to be processed to a specified resource
   - ○ **Both can submit data but POST allows larger quantities of data**

2. Is it possible to generate continuous functions with first generation neuron networks?
   - ○ Yes
   - ○ **No**
   - ○ Only with more than two hidden layers

3. Consider two threads in python: Which of the following is true?
   - ○ **Threads share memory space**
   - ○ Threads don't share memory space
   - ○ Threads share data but not code space
   - ○ Threads share code but not data space

4. What is the main characteristic of 6LoWPAN?
   - ○ **It provides IP support for tiny devices**
   - ○ It provides TCP support
   - ○ It provides low range communication radio
   - ○ It provides security and encryption

5. What is the relationship between microservices and containers?
   - ○ Containers are microservices
   - ○ Containers are a collection of microservices
   - ○ **Containers are used to implement microservices**

6. What is a correct definition of duty cycle?
   - ○ Ratio between inactivity VS activity time period
   - ○ Time interval between two device activities
   - ○ Ratio between activity VS inactivity time period
   - ○ **Ratio between activity VS total time period**

7. With reference to MQTT, select the correct order of protocols in the stack:
   - ○ **TCP/UDP -> MQTT -> JSON**
   - ○ TCP/UDP -> HTTP -> MQTT -> JSON
   - ○ TCP/UDP -> REST -> MQTT -> JSON
   - ○ TCP/UDP -> MQTT -> HTTP -> JSON

8. What is a correct sequence of operations for a MQTT communication for a publisher?
   - ○ Connect to broker-> Subscribe to topic-> Publish a message
   - ○ Subscribe to topic-> Publish a message-> Connect to broker
   - ○ Publish a message-> Connect to broker -> Subscribe to a topic
   - ○ **Connect to broker->publish a message with a topic**