Non exhaustive list of possible questions for the exam

Non exhaustive → in the exam there might be other questions not listed here
Possible → any question in the exam does not necessarily belongs to the list

1. Definition of IoT
2. Critical and massive IoT: definitions and application domains
3. Depict the IoT infrastructure view diagram and comment it
4. Describe IoT sensors in the industrial environments and, in particular, the PLC
5. Define and compare the Data Plane and the Control Plane
6. Define and compare the IT and OT technologies in the context of the IoT
7. Define and describe the edge node functional components
8. Define the concept of metadata and motivate its importance in the IoT context
9. Describe the function placement in IoT systems with emphasis on the criteria commonly used to guide the placement
10. Describe how messages exchanged between IoT nodes can be delivered
11. Describe the provisioning in IoT Systems with particular emphasis to the zero-touch provisioning
12. Describe the functions and a possible implementation of an IoT Edge node
13. Provide an overview of the IoT Network Layers
14. List and comment the characteristics of interest when evaluating wireless edge networks
15. Provide a taxonomy of the radio frequency bands used in IoT edge networks
16. Is the use of unlicensed spectrum free of constraints? why?
17. Provide a definitions of Low-Power and Lossy Networks
18. Describe IEEE 802.15.4
19. Describe 6LoWPAN
20. Describe at least one IP-based network using IEEE 802.15.4
21. Describe the ZigBee system
22. Describe the Bluetooth system
23. Describe the Long Range Low Power Wide Area Networks
24. Describe CoAP
25. Describe MQTT
26. Describe at least 3 different models of cloud computing
27. Describe the IoT system cloud components
28. Describe the types of IoT databases
29. Define and Describe the concept of Digital Twins
30. Describe IoT Security Threats and Vulnerabilities
31. List the security principles derived from the work of Saltzer and Schroeder
32. Describe the basic objectives of IoT endpoint security and most important techniques and tools to achieve it
33. Describe the principles of network isolation and segmentation in the context of IoT security
34. Describe the life cycle management of IoT nodes in the context of IoT security
35. Describe the Payloads and Data Serialization in the context of the interoperability using a shared information model in IoT
36. Describe the primary function of metadata and the types of metadata

37. Describe the IPSO standard
38. Describe the OPC-UA standard
39. Describe the concept of Smart City
40. Describe of we can measure the level of "Smartness" of a City