CAMBRIDGE INSTITUTE OF TECHNOLOGY

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Introduction to IoT

Question Bank

Module 1

1.Differentiate between point-to-point and point-to-multipoint connection types.

2. Discuss the pros and cons of the following network topologies:

(a) Star

(b) Ring

(c) Bus

(d) Mesh

3. How are PANs different from LANs?

4. How are MANs different from WANs?

5. What is the ISO-OSI model?

6. Discuss the highlights of the seven layers of the OSI stack.

7. What is the Internet protocol suite?

8. How is the Internet protocol suite different from the ISO-OSI model?

9.What is IoT? Explain the evolution of IoT .

10. Differentiate between IoT and M2M.

11. Differentiate between IoT and WoT.

12.What is Web of Things (WoT)?

13.What are the various IoT connectivity terminologies?

14.Differentiate between an IoT proxy and an IoT gateway.

15.How is the evaluation of the IoT taken place, Discuss in detail.

16. Explain the interdependency of the IOT with others with appropriate diagram

17. Discuss the typical IoT network ecosystem highlighting the various networking components from IoT nodes to the Internet.

18.Write a note on:

i. Industry 4.0

ii. CPS (cypher physical system)

iii. IoE (Internet of people)

iv. IoP (Internet of environment)

Module 2

1. Differentiate between sensors and actuators.
2. Differentiate between sensors and transducer.
3. How is transducer different from actuators.
4. Define Sensor and give few examples.
5. Classify Sensors based on the 3 parameter and explain it with examples
6. Discuss the sensorial deviation with examples.
7. Explain Typical sensor node in IOT with appropriate functional diagram
8. Describe sensor characteristics.
9. What are different types of sensing.
10. Explain the hybrid sensing and virtual sensing.
11. Differentiate between scalar and multimedia sensing.
12. What are the major factors influence the choice of sensors in IoT-based sensing solutions
13. What is an actuator? Explain in detail different types of actuators.
14. Narrate the characteristics of the actuators.

Module 3

1. What are the different data formats found in IoT network traffic streams?
2. Depending on the urgency of data processing, how are IoT data classified?
3. Highlight the pros and cons of on-site and off-site processing.
4. Explain On-Site Processing with neat diagram.
5. Differentiate between structured and unstructured data.
6. How is collaborative processing different from remote processing?
7. Explain the Collaborative processing with neat diagram
8. What are the critical factors to be considered during the design of IoT devices?
9. Explain with diagram the different layers and its communication in processing offloading.

10. What are the typical data offload locations available in the context of IoT?
11. List the various decision-making approaches chosen for offloading data in IoT. Explain each approach
12. Explain in brief the factors to be considered while deciding on the data offload location.

Module 4

1. What are the advantages of cloud computing?
2. With a example, explain how software-as-a service is different from platform-as-a-service?
3. What is an SLA? Why it is important in cloud computing?
4. Differentiate between scalability and elasticity?
5. What is an Amazon Machine Image?
6. What are the difference between modular and containerized data centers?
7. What is the relationship between IoT and cloud Computing?
8. What is a sensor-cloud? Why do we use sensor-cloud?
9. Differentiate among different cloud deployment models.
10. Differentiate sensor-cloud and virtual sensor network(VSN)
11. Explain the features of CloudSim.
12. Explain the features of Cloud Analyst and GreenCloud.
13. Explain the two cloud models in detail.
14. Explain the advantages of Virtualization.

Module 5

1. Explain the architecture of vehicular IoT.
2. Narrate the components of vehicular IoT.
3. What is RSU .Explain its significance in vehicular IoT.
4. Explain smart transportation system which help in crime assistance.
5. Explain what is health care IoT. Give one case study or application.
6. explain advantages and risk factor in healthcare IoT.
7. What is machine learning.
8. Explain different types of machines learning.
9. What are the advantages of machine learning.