

# CBCS SCHEME

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20SCS15

## First Semester M.Tech. Degree Examination, Feb./Mar. 2022 Internet of Things and Applications

Time: 3 hrs.

Max. Marks: 100

*Note: Answer any FIVE full questions, choosing ONE full question from each module.*

### Module-1

- 1 a. Define IOT. Differentiate a sensor and an actuator. Give examples. (10 Marks)  
b. With a neat diagram, illustrate the taxonomy of applications in the M2M context. (10 Marks)

OR

- 2 a. Discuss the scope of IOT. (10 Marks)  
b. Discuss the typical requirements of distributed control/M2M. (10 Marks)

### Module-2

- 3 a. List the properties and requirements of M2M applications. (10 Marks)  
b. With a suitable diagram, define DAG and DODAG in RPL. (10 Marks)

OR

- 4 a. Explain the structural aspects of the IOT. (10 Marks)  
b. With a suitable diagram, explain M2M in 3GPP-architecture. (10 Marks)

### Module-3

- 5 a. With a neat sketch, explain IEEE 802.15.4 PHY layer packet structure. (10 Marks)  
b. What are the capabilities of IPV6 protocol? Write and explain the IPV6 packet structure? (10 Marks)

OR

- 6 a. What is LTE? What are the benefits of LTE? With a suitable diagram, explain the EPS network architecture? (14 Marks)  
b. Discuss the requirements which are applicable to an organization wishing to introduce an IPV6 service. (06 Marks)

### Module-4

- 7 a. Write the domain model of the home intrusion detection system. (10 Marks)  
b. Write a program in python for controller native service for home intrusion detection. (10 Marks)

OR

- 8 a. Explain the deployment design of the weather monitoring system. (10 Marks)  
b. Write a program in python for controller native service for smart parking. (10 Marks)

### Module-5

- 9 a. How do you setup Hadoop cluster? (10 Marks)  
b. What are various high level tools for data analysis supported? Explain briefly. (10 Marks)

OR

- 10 a. How does a Hadoop map reduce workflow for batch analysis of IOT data works? Explain. (10 Marks)  
b. What is Hadoop YARN? Explain the key components of YARN? (10 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and/or equations written eg, 42+8 = 50, will be treated as malpractice.