



# CBCS SCHEME

18CS81

## Eighth Semester B.E. Degree Examination, June/July 2024 Internet of Things

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 and discuss the genesis of IoT in detail. (06 Marks)
- b. List out the difference between IT and OT networks and their various challenges. (06 Marks)
- c. What are the different challenges of IOT? Explain. (08 Marks)

OR

- 2 a. Explain with diagram the one M2M IoT standardized architecture. (08 Marks)
- b. Explain IoT Data Management and Compute Stack. (08 Marks)
- c. List and explain the defining characteristics of fog computing. (04 Marks)

### Module-2

- 3 a. List out the most useful classification scheme for the pragmatic application of sensors in a IoT network. (08 Marks)
- b. Define sensors and actuators. Explain how they interact with the physical world. (08 Marks)
- c. Define smart objects. Explain its characteristics. (04 Marks)

OR

- 4 a. What are constrained devices and constrained node networks? Classify them. (08 Marks)
- b. Explain Zigbee protocol stack using IEEE 802.15.4. (08 Marks)
- c. Briefly describe about communication criteria. (04 Marks)

### Module-3

- 5 a. What are the key advantages of the IP suite for IoT? (08 Marks)
- b. Explain in detail the 6LOWPAN. (08 Marks)
- c. Explain the different schedule management and packet forwarding models of TiSCH. (04 Marks)

OR

- 6 a. Explain in detail COAP message format. (08 Marks)
- b. Explain Message Queuing Telemetry Transport (MQTT). (06 Marks)
- c. Explain the raw socket tunneling of SCADA using different scenarios. (06 Marks)

### Module-4

- 7 a. What are the ways IoT data is categorized? Explain in detail. (08 Marks)
- b. Explain in detail supervised learning and unsupervised learning. (06 Marks)
- c. Explain in detail the core functions of edge analytics with necessary diagrams. (06 Marks)

OR

- 8 a. Explain the different steps and phases of OCTAVE Allegro methodology. (08 Marks)
- b. Explain Lambda Architecture in details. (06 Marks)
- c. Explain any two Big data Analytics tools and technologies. (06 Marks)

**Module-5**

- 9 a. What is Arduino? What are the advantages of Arduino? (08 Marks)  
b. How to install arduino software for the windows PCs? (06 Marks)  
c. Explain the different pins/parts of Arduino Uno Board. (06 Marks)

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- 10 a. Explain the different layers of IoT smart layered architecture. (08 Marks)  
b. Explain smart parking architecture with advantages and disadvantages. (06 Marks)  
c. With a neat diagram, explain wireless temperature monitoring system using Raspberry Pi. (06 Marks)

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