

# CBCS SCHEME



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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)

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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)

OR

- 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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