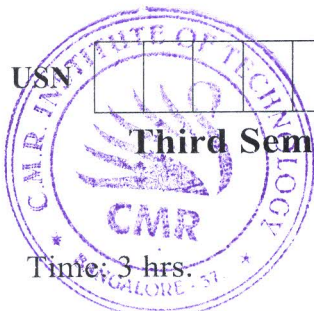


# CBCS SCHEME

20MCA32



Third Semester MCA Degree Examination, Dec.2023/Jan.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. What is IoT? Explain evolution phase of the internet. (10 Marks)
- b. What are the elements of M2M IoT architecture? Explain. (10 Marks)

OR

- 2 a. Describe IoT World Forum (IoTWF) standardized architecture. (10 Marks)
- b. Write a note on IoT impact in real world. (10 Marks)

### Module-2

- 3 a. With a neat diagram, explain how actuators and sensors interact with physical world classification based on Energy Type (10 Marks)
- b. What is Zigbee? Explain 802.15.4 physical layer, MAC layer and security. (10 Marks)

OR

- 4 a. Explain LoRaWAN standard and alliance MAC layer and security. (10 Marks)
- b. Explain "IoT" Access Technologies. (10 Marks)

### Module-3

- 5 a. Explain working of IP as the IoT layer. (10 Marks)
- b. Write note on Business Case for IP (05 Marks)
- c. Discuss need for optimization. (05 Marks)

OR

- 6 a. Describe application protocols for IoT. (10 Marks)
- b. Discuss the various methods and in IoT application transport. (10 Marks)

### Module-4

- 7 a. What do you mean by data & analytics for IoT? Explain. (10 Marks)
- b. Discuss Big data analytics tools & technology. (10 Marks)

OR

- 8 a. List the common challenges in IoT security. Explain any four of them. (10 Marks)
- b. Explain different types of Data Analytics. (10 Marks)

### Module-5

- 9 a. Describe the Raspberry Pi architecture. (10 Marks)
- b. Interface temperature sensor to the Arduino. (10 Marks)

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OR

- 10 a. With a neat diagram, explain Raspberry Pi board. (10 Marks)
- b. Explain in detail Smart City IoT architecture. (10 Marks)

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