

19 NOV 2025 MCA (SEM-II) CHOICE BASED IOT QP CODE: 10094246

(3 Hours)

Total Marks: 80

- N.B. :** 1) Question No.1 is **compulsory**.
2) Attempt any **THREE** from the remaining questions.
3) Figures to the right indicate full marks.

Q1. Write Short Notes on:

- (a) WoT Vs. CoT [5]
- (b) Applications of Smart Appliances [5]
- (c) Need of IoT Security [5]
- (d) Zigbee Architecture [5]

Q2. (a) Explain the Logical Design of IoT. Discuss the IoT Functional Blocks & IoT Communication Models with the help of a neat diagram. [10]

(b) Discuss the evolution from M2M (Machine-to-Machine) communication to IoT. Highlight the major differences and how IoT extends the capabilities of M2M. [10]

Q3. (a) Explain the IoT Reference Model in detail. Discuss the purpose of developing reference models in IoT and describe the different layers involved. [10]

(b) Describe the Safety, Privacy, Trust, and Security models in the Internet of Things (IoT). Explain their importance in ensuring secure and reliable IoT system operations. [10]

Q4. (a) Compare and contrast the following IoT communication protocols: [10]

- I. BACnet Protocol
- II. KNX Protocol

(b) Explain the working principle and features of the IEEE 802.15.4 protocol. Why is it widely used in low-power IoT networks? [10]

Q5. (a) Illustrate the IoT Platform Design Methodology with a neat diagram, explaining how various specification stages are interconnected to achieve a functional IoT system. [10]

(b) Define Home Automation in the context of IoT. Explain the fundamental components and diagram of an IoT-based home automation system. [10]

Q6. (a) Explain the Cloud of Things (CoT) architecture. Discuss how Mobile Cloud Computing enhances the accessibility and flexibility of IoT services. [10]

(b) Discuss the two pillars of the Web and their importance in enabling the Web of Things framework. [10]