

BACHELOR OF TECHNOLOGY (CBCS) (2021-COURSE)
B. Tech. Sem - VII Computer Science & Business Systems : WINTER: 2025
SUBJECT: INTRODUCTION TO IOT

Day : Monday
Date : 15/12/2025

W-24201-2025

Time : 02:30 PM-05:30 PM
Max. Marks : 60

N.B.

- 1) All questions are **COMPULSORY**.
- 2) Figures to the **RIGHT** indicate **FULL** marks.
- 3) Assume suitable data, if necessary.
- 4) Draw neat and labeled diagrams, **wherever** necessary.

Q.1 What are the fundamental building blocks of an IoT architecture? Discuss each block briefly. (10)

OR

Q.1 Describe the role of sensors, connectivity and data processing in IoT, systems. Provide examples of their interactions. (10)

Q.2 What is edge computing, and how does it enhance IoT systems? Discuss the role of IoT gateways in enabling edge computing. (10)

OR

Q.2 Describe the data ingestion and data processing pipeline in an IoT ecosystem. How does data stream processing differ from traditional batch processing? (10)

Q.3 What are sensors and transducers? Discuss their difference and provide examples of how they are used in industrial systems. (10)

OR

Q.3 What are industrial control systems (ICS), and what are their primary functions? Provide example of different types of ICS used in industrial applications. (10)

Q.4 Describe the OSI 7-layer architecture. How is it mapped to an IoT architecture, and what unique challenges does IoT introduce at different layers? (10)

OR

Q.4 Explain the CANbus protocol and its role in industrial networking. How does it differ from Modbus in terms of architecture and application? (10)

Q.5 Explain how IoT devices communicate with cloud applications using web services. What is the role of REST in this communication? (10)

OR

Q.5 Compare TCP/IP and UDP/IP sockets in the context of IoT applications? In which scenarios would each be preferable? (10)

Q.6 What are time series data, and what are their key characteristics? Provide examples of how they are used in IoT applications. (10)

OR

Q.6 What are the basic techniques used for time series analytics? How do these technique help in understanding IoT data? (10)

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