

MU Student United

IOE SEM 7 IT QB

****NOTE FIRST PREFER QUESTIONS THAT ARE REPEATED MOST****

Module I – Introduction to IoT (4 Hrs)

5 Marks Questions

1. Define Smart Object in IoT and its characteristics. *(2025 May – 1 time)*
2. Explain characteristics of IoT. *(2024 May – 1 time)*
3. Define IoT with Conceptual Framework. *(2022 May – 1 time)*
4. Differentiate briefly Physical design of IoT and Logical design of IoT. *(2023 Dec – 1 time)*
5. Explain functional blocks of IoT. *(2023 Dec, 2024 Dec – 2 times)*

10 Marks Questions

1. Elaborate the Smart Object with diagram and describe its characteristics. *(2023 May, 2024 May – 2 times)*
2. Elaborate briefly the simplified 3-layered IoT architecture with neat diagram. *(2023 Dec, 2024 Dec – 2 times)*
3. Discuss the functional blocks of IoT architecture, highlighting their roles and interactions. *(2024 May – 1 time)*

Module II – IoT Architecture (6 Hrs)

5 Marks Questions

1. Explain data acquisition in IoT. *(2025 May – 1 time)*
2. Explain functional blocks of IoT. *(2023 Dec – 1 time)*
3. Explain concept of I-IoT and its similarity with IoT. *(2024 May, 2023 Dec – 2 times)*

10 Marks Questions

1. Describe IoT World Forum (IoTWF) Standardized Architecture. *(2022 May, 2023 May, 2025 May – 3 times)*
2. Elaborate the need of new network architecture in IoT. *(2023 May, 2024 May – 2 times)*
3. Simplified 3-layered IoT architecture. *(2023 Dec – 1 time)*
4. Describe the IoT enabled Smart Home Automation system. *(2023 Dec, 2025 May – 2 times)*

5. Discuss the functional blocks of IoT architecture, highlighting their importance. *(2024 May – 1 time)*

Module III – Principles of Connected Devices and Protocols in IoT (8 Hrs)

5 Marks Questions

1. Write short note on RFID. *(2025 May – 1 time)*
2. Explain applications of Bluetooth Low Energy (BLE). *(2023 May – 1 time)*
3. Compare and contrast RFID with Bluetooth. *(2022 May – 1 time)*
4. Write short note on Near Field Communication (NFC). *(2023 Dec – 1 time)*
5. Explain Zigbee in brief. *(2023 Dec – 1 time)*

10 Marks Questions

1. State various operating modes of Zigbee and its topologies. *(2025 May – 1 time)*
2. Explain the architecture of LoRaWAN with its major characteristics. *(2022 May, 2023 May, 2023 Dec, 2025 May – 4 times)*
3. Explain the following access technologies (IEEE 802.15.4, Z-Wave, LTE-A). *(2024 May, 2023 Dec – 2 times)*
4. Describe the communication systems and protocols in long range communication systems of IoT. *(2023 Dec – 1 time)*
5. Illustrate components of IEEE 802.11 architecture. *(2022 May, 2023 Dec – 2 times)*

Module IV – Edge to Cloud Protocol (8 Hrs)

5 Marks Questions

1. Draw and explain architecture of MQTT with diagram. *(2023 May, 2025 May – 2 times)*
2. Elaborate briefly CoAP. *(2024 May, 2022 May – 2 times)*
3. Write short note on CoAP. *(2022 May – 1 time)*

10 Marks Questions

1. Explain MQTT Architecture with advantages. *(2023 Dec, 2022 May – 2 times)*
2. Elaborate MQTT with its working and advantages over CoAP. *(2023 Dec – 1 time)*

3. Explain working of Constraint Application Protocol (CoAP). (2025 May – 1 time)
 4. Describe architecture of Advanced Message Queuing Protocol (AMQP). (2022 May, 2023 May, 2023 Dec, 2025 May – 4 times)
 5. Explain HTTP, WebSocket, and MQTT in IoT communication. (2024 May – 1 time)
 6. Compare all protocols used in IoT for Cloud–Edge. (2023 Dec – 1 time)
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Module V – IoT and Data Analytics (6 Hrs)

5 Marks Questions

1. Explain importance of IoT Data Analytics. (2022 May, 2023 Dec, 2025 May – 3 times)
2. Compare and contrast IoT data analytics and IoT network analytics. (2023 May – 1 time)

10 Marks Questions

1. Explain role of NoSQL in IoT Data Analytics Challenges. (2022 May, 2023 Dec, 2025 May – 3 times)
 2. Elaborate strategies to organize Data for IoT Analytics. (2023 Dec – 1 time)
 3. Define IoT Analytics and list challenges. (2024 May – 1 time)
 4. Explain Data Lakes and refineries in IoT. (2023 Dec – 1 time)
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Module VI – IoT Application Design (4 Hrs)

5 Marks Questions

1. Explain data retention strategy. (2023 Dec, 2024 May – 2 times)
2. Define IoT Applications and its design considerations. (2025 May – 1 time)

10 Marks Questions

1. Design the Forest Fire Detection System using IoT Sensors. (2022 May, 2025 May – 2 times)
2. Explain effective Data Visualization methods. (2023 Dec – 1 time)
3. Discuss various IoT Application Transport Methods. (2022 May – 1 time)
4. Create and visualize alerts in IoT. (2025 May – 1 time)
5. Smart Smoke Detection / Smart Irrigation System – explain working with sensors and actuators. (2023 May, 2023 Dec, 2024 May – 3 times)

