

Section-D

Note: Long answer questions. Attempt any two question out of three Questions. (2x8=16)

- Q.23 Explain in detail how sensors and actuators are integrated into an industrial IoT system using Arduino. (CO2)
- Q.24 Describe the concept of Fog computing and its advantages for Industrial IoT applications. (CO4)
- Q.25 Discuss the architecture of Industrial IoT, including its components and communication protocols. (CO1)

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Time : 3 Hrs.

M.M. : 60

SECTION-A

Note: Multiple Choice Questions. All Questions are compulsory. (6x1=6)

- Q.1 _____ is an example of an actuator in an Industrial IoT system? (CO2)
a) Temperature sensor b) Ultrasonic sensor
c) Motor d) Humidity sensor
- Q.2 What does LoRaWAN Stand for? (CO3)
a) Long Range Wireless Area Network
b) Local Range Wireless Areas Network
c) Low Range Wide Access Network
d) Low Resource Wireless Area Network
- Q.3 _____ would most likely be used for gas detection in Industrial IoT? (CO2)
a) IR Sensor b) Ultrasonic Sensor
c) MQ2 Sensor d) Temperature Sensor

Q.4 In an Industrial IoT system _____ is responsible for initiating control actions? (CO2)

- a) Sensor
- b) Actuator
- c) Cloud Server
- d) Edge Device

Q.5 _____ is ideal for detecting the presence of a human in Industrial IoT applications? (CO2)

- a) MQ2 Sensor
- b) Ultrasonic Sensor
- c) PIR Sensor
- d) DHT 22 Sensor

Q.6 Which sensor can be used to detect obstacles in Industrial IoT Applications? (CO2)

- a) IR Sensor
- b) Temperature Sensor
- c) Humidity Sensor
- d) Pressure Sensor

Section-B

Note: Objective/Completion type questions. All questions are compulsory. (6x1=6)

Q.7 Define the term "Industrial IoT" (CO1)

Q.8 Name two common sensors used in Industrial IoT Applications. (CO2)

Q.9 Expand MQTT is IOT communication. (CO3)

Q.10 What is "edge computing." (CO4)

Q.11 Name two development boards commonly used in Industrial IoT. (CO5)

Q.12 Give one advantage of using LoRaWAN in Industrial IoT. (CO3)

Section-C

Note: Short answer type Question. Attempt any eight questions out of Ten Questions. (8x4=32)

Q.13 Compare Bluetooth and BLE (Bluetooth Low Energy) on various parameters? (CO3)

Q.14 Compare Industrial IoT with the traditional IoT. (CO1)

Q.15 Explain the working principle of an IR sensor. (CO2)

Q.16 Describe the role of IEEE 802.15.4 in Industrial IoT. (CO3)

Q.17 What is the importance of real-time data collection in Industrial IoT? (CO3)

Q.18 Explain how to interface a temperature sensor with a Raspberry Pi. (CO5)

Q.19 How does Fog computing differ from Cloud computing? (CO4)

Q.20 Describe the Machine-to-Machine (M2M) communication in Industrial IoT. (CO5)

Q.21 What are the security challenges in deploying Industrial IoT. (CO4)

Q.22 Explain how LoRa communication is used in Industrial IoT. (CO3)