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Roll No. .....

5th Sem / Automation & Robotics

Subject : Industrial IoT

Time : 3 Hrs. M.M. : 60

SECTION-A

Note: Multiple choice questions. All questions are compulsory (6x1=6)

Q.1 Which development board can be used for industrial IoT applications ? (CO5)

a) Arduino b) ESP826

c) Raspberry Pi d) All of the above

Q.2 Which of the following is a common Industrial IoT architecture component ? (CO1)

a) Web servers b) IoT node

c) Personal computers d) Smartphones

Q.3 ___is a short - range wireless communication technology used in Industrial IoT? (CO3)

a) LoRaWAN b) Z-Wave

c) NFC

d) Bluetooth Low Energy (BLE)

Q.21 What are the challenges in implementing Industrial IoT in real industries ? (CO4)

Q.22 Describe the role of OPC UA in Industrial IoT communication. (CO3)

SECTION-D

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

Q.23 Describe in detail the Industrial IoT architecture and its components . (CO1)

Q.24 Explain in detail the process of integrating sensors and actuators with Arduino for IIoT applications . (CO2)

Q.25 Discuss the various methods for managing and handling industrial data in IoT environments.(CO4)

Q.4 Which platform is used to control and collect data from sensors in Industrial IoT? (CO5)

a) Raspberry Pi b) Mobile phones

c) Laptop d) Tablets

Q.5 ____is typically used to detect gas leakage in Industrial IoT applications. (CO2)

a) DH11 Sensor b) MQ2 Sensor

c) Ultrasonic Sensor d) IR Sensor

Q.6 Which of the following is a key advantage of using MQTT in Industrial IoT? (CO3)

a) High bandwidth requirement

b) Low power consumption

c) High data storage

d) Fast signal processing

SECTION-B

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

Q.7 Define Industrial IoT. (CO1)

Q.8 List Two types of sensors used in Industrial IoT ? (CO2)

Q.9 Give one method to connect Arduino to web ?(CO3)

Q.10 Define Fog Computing ? (CO4)

Q.11 List two troubleshooting methods for Arduino in Industrial IoT applications. (CO5)

Q.12 Expand MQTT in reference to Industrial IoT.(CO3)

SECTION-C

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

Q.13 Explain the significance of Modbus in Industrial IoT communication (CO3)

Q.14 Compare IoT and Industrial IoT with examples. (CO1)

Q.15 Explain the working principle of Ultrasonic Sensor. (CO2)

Q.16 What are the different communication protocols used in Industrial IoT? (CO3)

Q.17 Describe how edge devices collect and manage data in IIoT. (CO4)

Q.18 Explain the steps for setting up a Raspberry Pi for Industrial IoT. (CO5)

Q.19 How do sensors and actuators communicate in an industrial IoT network? (CO2)

Q.20 Discuss MQTT communication in detail ? (CO2)