

Q.22 Create a neat sketch of an Industrial IoT architecture and explain its key components, including sensors, gateways, and cloud services? (CO4)

No. of Printed Pages : 4

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Roll No.

**5th Sem / Branch : Automation & Robotics
Sub.: Industrial IOT**

SECTION-D

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

Q.23 List various industry standard communication protocols? Explain any one in details using suitable diagram? (CO4)

Q.24 Explain the process of web-based data handling using Raspberry Pi? Write a program or flowchart to illustrate send data to a web page? (CO5)

Q.25 Define troubleshooting? Describe the troubleshooting process for common Arduino issues and provide possible cause and solutions for such issues? (CO5)

Time : 3Hrs.

M.M. : 60

SECTION-A

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

Q.1 MQTT is primarily oriented towards which aspect of communication in IoT? (CO2)

- a) Message
- b) Connection
- c) Data
- d) Terminal

Q.2 Which of the following sensors is NOT primarily used for temperature measurement? (CO3)

- a) LM35
- b) DHT-11
- c) DS18B20
- d) MQ2

Q.3 Which of the following sensors is commonly used for detecting gas leakage? (CO3)

- a) Ultrasonic sensor
- b) MQ2 sensor
- c) IR sensor
- d) Temperature sensor

Q.4 OPC UA is an industry standard communication technology primarily used for: (CO4)

- a) Home automation

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- b) Industrial automation and data exchange
 - c) Wireless networking
 - d) GPS tracking
- Q.5 What is the term for the process of retrieving data from a web page? (CO5)
- a) Web scraping b) Data mining
 - c) Cloud computing d) Fog computing
- Q.6 In IoT, what does M2M stand for? (CO1)
- a) Mobile to Mobile b) Man to Man
 - c) Machine to Machine d) Monitor to Monitor

SECTION-B

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

- Q.7 Expand NFC. (CO2)
- Q.8 Name any one humidity sensor? (CO3)
- Q.9 A post request can be used to interact with a HTTP based webpage. (True/False) (CO2)
- Q.10 Give an example of electro mechanical switch? (CO3)
- Q.11 What is OPC UA? (CO4)
- Q.12 Z wave is a mesh-based network. (True/ False) (CO4)

SECTION-C

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

- Q.13 Compare Bluetooth and BLE (Bluetooth Low Energy) in terms of power consumption, range and applications. Provide examples of scenarios where each is more suitable? (CO3)
- Q.14 Write a note on IoT interactions? (CO2)
- Q.15 Elaborate on the working principle of an IR sensor and provide a real-world scenario where it is commonly used in Industrial IoT applications? (CO3)
- Q.16 Write a note on cloud computing? (CO1)
- Q.17 Define edge device? Compare traditional / Common & intelligent edge devices? (CO3)
- Q.18 Illustrate the concept of fog computing using a suitable diagram. Explain the key components and their functions in fog computing? (CO1)
- Q.19 Compare LoRAWAN and NFC in terms of their merits and demerits for IoT applications? (CO4)
- Q.20 Data collected using IoT in an enterprise enhance productivity. Explain with example? (CO4)
- Q.21 Compare closed loop & open loop control system? (Co5)

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