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Question Paper Code	12254
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B.E. / B.Tech - DEGREE EXAMINATIONS, NOV / DEC 2023
Sixth Semester
Electrical and Electronics Engineering
20EEPW601 - EMBEDDED SYSTEMS AND IOT WITH LABORATORY
(Regulations 2020)

Duration: 3 Hours

Max. Marks: 100

PART - A (10 × 2 = 20 Marks)
Answer ALL Questions

- | | <i>Marks,</i>
<i>K-Level, CO</i> |
|---|-------------------------------------|
| 1. What is watch dog timer? | 2,K1,CO1 |
| 2. Give some examples for small scale embedded systems. | 2,K1,CO1 |
| 3. Define IOT. | 2,K1,CO2 |
| 4. Define IIOT. | 2,K2,CO2 |
| 5. What is a CAN bus? Where is it used? | 2,K1,CO3 |
| 6. What is I2C? | 2,K1,CO3 |
| 7. Define multitasking. | 2,K1,CO4 |
| 8. What is RTOS? | 2,K1,CO4 |
| 9. What are Autonomous vehicles? | 2,K1,CO5 |
| 10. What are the sensors used in plant growth? | 2,K1,CO5 |

PART - B (5 × 13 = 65 Marks)
Answer ALL Questions

- | | |
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| 11. a) Explain the possible steps are involved in build process of ES. | 13,K2,CO1 |
| OR | |
| b) Explain about the selection of processor and memory device in detail. | 13,K2,CO1 |
| 12. a) Explain the different types of Network communication in IoT. | 13,K2,CO2 |
| OR | |
| b) Explain in details IoT Architecture layers. | 13,K2,CO2 |
| 13. a) Explain the RS 232, RS 422 and RS 485 protocol. | 13,K2,CO3 |
| OR | |
| b) Explain the CAN Architecture with a neat diagram. | 13,K2,CO3 |

14. a) Explain in detail about semaphores and its applications. *13,K2,CO4*

OR

b) Explain in detail about the shared data problem and its possible solutions. *13,K2,CO4*

15. a) Explain Home Automation and its applications using Embedded systems with IoT. *13,K2,CO5*

OR

b) Discuss in detail about the IoT based Smart Irrigation with examples. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) (i) Explain the different types of Scheduling algorithms. *5,K2,CO4*

(ii) Explain how IoT technology used to enable the agricultural industry to increase operational efficiency, lower costs, reduce waste, and improve the quality of their yield. *10,K2,CO5*

OR

b) (i) List out various problems associated with semaphores. *5,K2,CO4*

(ii) Develop a model of IoT based Home automation systems. *10,K2,CO5*