



B.E / B.TECH. DEGREE EXAMINATIONS: APRIL / MAY 2023

(Regulation 2018)

Sixth Semester

COMMON TO ALL BRANCHES

U18CSR6004: Industrial IoT

COURSE OUTCOMES

CO1: Understand business models and reference architectures for IIOT.

CO2: Illustrate the importance of key enablers of industrial IIOT.

CO3: Describe the importance of Digital Twin and its benefits.

Time: Three Hours

Maximum Marks: 100

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

(Answer not more than 40 words)

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|---|-----------------------|
| 1. List the benefits of IIOT. | CO1 [K ₁] |
| 2. Summarize the advantages of WSN. | CO1 [K ₂] |
| 3. Illustrate the Three tier Architecture for IIRA framework | CO1 [K ₂] |
| 4. Show the benefits of sensor usage in IIOT. | CO2 [K ₂] |
| 5. Compare Industrial Ethernet and Field Bus. | CO2 [K ₂] |
| 6. Name the different types of business processing analytics. | CO2 [K ₁] |
| 7. List the types of industrial control systems. | CO2 [K ₁] |
| 8. Write about Digital shadow. | CO3 [K ₁] |
| 9. Outline important features of Digital Twin. | CO3 [K ₂] |
| 10. Name any three digital twin trends. | CO3 [K ₂] |

**Answer any FIVE Questions: -
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)**

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|-----|----|---|---|-----|-------------------|
| 11. | a) | Discuss SCADA architecture and it's components. | 8 | CO1 | [K ₂] |
| | b) | Explain various sensing for manufacturing process in IIOT. | 8 | CO2 | [K ₂] |
| 12. | a) | Describe various gas sensing methods in IIOT. | 8 | CO2 | [K ₂] |
| | b) | Show the importance of digital twin in product life cycle with suitable example. | 8 | CO3 | [K ₂] |
| 13. | a) | Summarize the functionality of the business models given below:
(i) Subscription Model.
(ii) IoT as a service | 8 | CO1 | [K ₂] |
| | b) | Discuss various types of Digital twin technologies. | 8 | CO3 | [K ₂] |
| 14. | a) | Illustrate 5C architecture of Cyber Physical System. | 8 | CO1 | [K ₂] |
| | b) | Discuss about Profibus and Tactile Internet. | 8 | CO2 | [K ₂] |
| 15. | a) | Explain IIOT application in Oil and Gas industry. | 8 | CO2 | [K ₂] |
| | b) | Summarize any four applications of digital twin technology. | 8 | CO3 | [K ₂] |
| 16. | a) | Explain Business model building blocks. | 8 | CO1 | [K ₂] |
| | b) | Give detailed discussion of layered architecture of Digital twin. | 8 | CO3 | [K ₂] |
