USN | | | | | | | | | | **18SM65**

Sixth Semester B.Tech. Degree Examination, June/July 2023
Industrial Internet of Things

Time: 3 hrs.   Max. Marks: 100

Note: Answer any FIVE full questions, choosing ONE full question from each module.

Module-1

1 a. Explain theoretical foundations of cyber manufacturing and IIOT with a neat diagram.
(10 Marks)
   b. List the differences between technical dimensions and human dimension of industrial CPS.
(10 Marks)

OR

2 a. Explain the requirements needed for communication and data exchange in industrial CPS.
(10 Marks)
   b. With a neat diagram explain self learning electronics production processes.   **(10 Marks)**

Module-2

3 a. With an example discuss smart manufacturing design and analysis.   **(10 Marks)**
   b. Explain in detail about smart management system test bed components with a neat diagram.
(10 Marks)

OR

4 a. How do you evaluate cyber physical model? Discuss in methodologies in detail with a diagram.   **(10 Marks)**
   b. Explain the formal verification approaches for CPS.   **(10 Marks)**

Module-3

5 a. Explain control and communication structure of automation with a neat diagram.   **(10 Marks)**
   b. What is object memories? Explain object memories in detail with an example.   **(10 Marks)**

OR

6 a. Discuss the prerequisite and requirements for cyber physical production system in the resilient factory.   **(10 Marks)**
   b. Discuss interoperability between the layer of automation pyramid, inter connected through semantic interface standards.   **(10 Marks)**

Module-4

7 a. Explain in detail advanced manufacturing and innovation eco system.   **(10 Marks)**
   b. With a diagram, explain manufacturing innovations co system in massache setting.
(10 Marks)

OR

8 a. With a neat diagram user driven cyber physical production system.   **(10 Marks)**
   b. With a diagram, explain CPS and its worker operation in detail.   **(10 Marks)**

Module-5

9 a. Explain the working of IIOT in body area network.   **(10 Marks)**
   b. How smart manufacturing can be implemented? What are the uses of it? Discuss in detail.
(10 Marks)

OR

10 a. How IOT is used in home automation? Discuss in detail.   **(10 Marks)**
    b. List any IIOT manufacturing sector. Explain each in detail.   **(10 Marks)**

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.