GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII (NEW) EXAMINATION – SUMMER 2022

Subject Code:3171930   **Date:06/06/2022**
Subject Name:Industrial Internet of Things
Time:02:30 PM TO 05:00 PM   **Total Marks: 70**

Instructions:
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	List down possible benefits of implementing IIoT.	**03**
	(b)	Explain the importance of standards in smart manufacturing.	**04**
	(c)	Explain the Foundations of Industrial Cyber-Physical Systems in different dimensions.	**07**
Q.2	**(a)**	Explain Synthesis of Supervisory Controller with suitable example.	**03**
	(b)	Write short note on Prognostics, Health Management and Control.	**04**
	(c)	List down different categories of potential improvement for Industrial Cyber-Physical Systems. Explain any two in detail.	**07**
		OR	
	(c)	List down different Hybrid Models of the Uncontrolled System of AGVs. Explain any 4 models in details.	**07**
Q.3	**(a)**	Explain the importance of redundancy in network reliability.	**03**
	(b)	Explain in brief the challenges for Routing and Addressing in the IIoT.	**04**
	(c)	Explain the importance of Model based System Engineering in IIoT.	**07**
		OR	
Q.3	**(a)**	Explain Orchestrated Production in brief.	**03**
	(b)	Write short note on: Miniaturization and Function Integration.	**04**
	(c)	Discuss different components for CPS Autonomy.	**07**
Q.4	**(a)**	What are the recommendations to improve the innovation ecosystem?	**03**
	(b)	Explain the Pillars of the fourth industrial revolution in detail.	**04**
	(c)	Explain the possible solutions for achieving CPS Autonomy in Smart Factories.	**07**
		OR	
Q.4	**(a)**	Write down the classification of Intelligent Objects in the Machining Process.	**03**
	(b)	Discuss the requirements and challenges for Data Quality.	**04**
	(c)	What kind of improvement needs to be carried out by workers to deal with CPS based system?	**07**
Q.5	**(a)**	Briefly explain the concept of Body Area Networks.	**03**
	(b)	List down the applications of IIoT in real time world.	**04**
	(c)	Explain Performance Indicators of the following: a. Overall Systems Architecture, b. Production Operation, c. Changing Production Systems.	**07**
		OR	
Q.5	**(a)**	Discuss the role of Augmented Reality in IIoT.	**03**
	(b)	List down real life application of IIoT in manufacturing.	**04**
	(c)	Briefly explain an Application Map for Industrial Cyber-Physical Systems.	**07**

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