

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER-VII (NEW) EXAMINATION – SUMMER 2024****Subject Code: 3171930****Date:30-05-2024****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.

		<b>MARKS</b>
<b>Q.1</b>	<b>(a)</b> What is IIOT?	<b>03</b>
	<b>(b)</b> List down possible benefits of implementing IIOT.	<b>04</b>
	<b>(c)</b> Briefly explain an Application Map for Industrial Cyber-Physical Systems.	<b>07</b>
<b>Q.2</b>	<b>(a)</b> What is condition monitoring?	<b>03</b>
	<b>(b)</b> How does HMI is related to IIOT technology?	<b>04</b>
	<b>(c)</b> List general abilities of cyber physical system. Explain any two in detail.	<b>07</b>
	<b>OR</b>	
	<b>(c)</b> What are the advanced abilities of cyber physical system? Explain any two in detail.	<b>07</b>
<b>Q.3</b>	<b>(a)</b> List the performance indicators of production operation.	<b>03</b>
	<b>(b)</b> List down different Hybrid Models of the Uncontrolled System of AGVs.	<b>04</b>
	<b>(c)</b> Explain the importance of Model based System Engineering in IIOT.	<b>07</b>
	<b>OR</b>	
<b>Q.3</b>	<b>(a)</b> List the performance indicators of the cyber support.	<b>03</b>
	<b>(b)</b> Explain simplified model of SystemC kernel.	<b>04</b>
	<b>(c)</b> Explain Synthesis of Supervisory Controller with suitable example.	<b>07</b>
<b>Q.4</b>	<b>(a)</b> What is the function of data model?	<b>03</b>
	<b>(b)</b> Explain digital object model architecture.	<b>04</b>
	<b>(c)</b> Write a short note on Semantic Orchestration.	<b>07</b>
	<b>OR</b>	
<b>Q.4</b>	<b>(a)</b> Define the terms: Sensors, Controller, and Actuators.	<b>03</b>
	<b>(b)</b> Explain the objectives of resilient factory.	<b>04</b>
	<b>(c)</b> Briefly explain the challenges in the development of Industrial Internet of Things.	<b>07</b>
<b>Q.5</b>	<b>(a)</b> What is big data related to IIOT?	<b>03</b>
	<b>(b)</b> Explain the concept of home automation with a suitable example.	<b>04</b>
	<b>(c)</b> Write short note on Advanced Manufacturing Innovation Ecosystem.	<b>07</b>
	<b>OR</b>	
<b>Q.5</b>	<b>(a)</b> What is machine learning related to IIOT?	<b>03</b>
	<b>(b)</b> Explain the concept of Smart metering related to IIOT.	<b>04</b>
	<b>(c)</b> Briefly explain the strategies for User-Driven Cyber Physical Systems.	<b>07</b>

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