

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.

MARKS

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