GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2024

Subject Code:3161926   **Date:06-06-2024**
Subject Name:Industry 4.0
Time:10:30 AM TO 01:00 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)**	Define AI.	**03**
	(b)	List any three advantages of adaptive Robotics?	**04**
	(c)	How India is preparing for Industry 4.0? Explain in brief.	**07**
Q.2	**(a)**	What is end to end engineering? explain in short.	**03**
	(b)	Explain the Characteristics of smart factory.	**04**
	(c)	Explain a role of AI in Industry 4.0.	**07**
		OR	
	(c)	What are co-operative robots? Explain with two examples.	**07**
Q.3	**(a)**	What is technology road mapping?	**03**
	(b)	Explain in short virtualization and decentralization with respect to Industry 4.0.	**04**
	(c)	Explain Industry 4.0 Services.	**07**
		OR	
Q.3	**(a)**	What are benefits of technology Roadmap?	**03**
	(b)	Draw the Block Diagram of vertical integration.	**04**
	(c)	Explain AR Hardware and software Technology.	**07**
Q.4	**(a)**	What are the reasons of lack of digital strategy?	**03**
	(b)	What are the challenges in the Industry 4.0?	**04**
	(c)	What are the legal challenges in the Industry 4.0 transformation?	**07**
		OR	
Q.4	**(a)**	What is robotics? What are three main categories of parts of robots?	**03**
	(b)	Draw a diagram showing role of digitization in industry 4.0 adaption.	**04**
	(c)	Describe the new products and process development phase of technology roadmap.	**07**
Q.5	**(a)**	What is Photogrammetry?	**03**
	(b)	Write a short note on smart factories.	**04**
	(c)	Describe the challenges faced by smart factories with regard to cyber security?	**07**

Q.5 **(a)** Write a Scope of AI.   **03**

(b) What is the difference between traditional robot and advanced robots? Explain with examples.   **04**

(c) What are the obstacles in the industry 4.0 transformation?   **07**