Seat No.: _____   Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VI (NEW) EXAMINATION – SUMMER 2023

Subject Code:3160716   **Date:10-07-2023**
Subject Name:IOT and applications
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)**	List out enabling technologies in IOT. Explain any one in details	**03**
	(b)	Explain characteristics of the IoT.	**04**
	(c)	Draw and Explain ATMEGA328P Microcontroller Pin diagram.	**07**
Q.2	**(a)**	Explain MQTT Broker and client.	**03**
	(b)	Differentiate MQTT and CoAP.	**04**
	(c)	Explain IoT Technology Stack.	**07**
		OR	
	(c)	Draw and explain IPv6 Header.	**07**
Q.3	**(a)**	Explain IOT messaging protocol in detail.	**03**
	(b)	Difference between Microcontroller and Microprocessor.	**04**
	(c)	What is ARM? Explain special feature of ARM processor.	**07**
		OR	
Q.3	**(a)**	Explain Ultrasonic sound sensor.	**03**
	(b)	Write Raspberry Pi code to blink LED ON and OFF,	**04**
	(c)	What is BLE? Explain components of BLE.	**07**
Q.4	**(a)**	Explain Various application of IoT in Food and Healthcare.	**03**
	(b)	Explain CoAP. List the key features of CoAP	**04**
	(c)	What is fog computing? List the characteristics of fog computing.	**07**
		OR	
Q.4	**(a)**	Explain Various application of IoT in Retail.	**03**
	(b)	Explain limitation of cloud computing.	**04**
	(c)	Discuss various types of Cloud Computing in IOT.	**07**
Q.5	**(a)**	Explain IoT and cyber physical system	**03**
	(b)	Describe IOT security needs and issues.	**04**
	(c)	What is Arduino? Explain features of Arduino architecture.	**07**
		OR	
Q.5	**(a)**	What are the challenges of IOT security?	**03**
	(b)	Explain any one algorithm for IOT security	**04**
	(c)	Explain various security issues and need for developing IOT based application.	**07**

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