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

Subject Code:3160716   **Date:28-11-2024**

Subject Name:IOT and applications

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)**	What is IoT ? List any five IoT applications.	**03**
	(b)	Explain enabling technologies in IoT.	**04**
	(c)	Draw and explain IOT architecture.	**07**
Q.2	**(a)**	Draw and explain IPv6 Header	**03**
	(b)	Explain various levels of IoT.	**04**
	(c)	List out types of IoT protocols and explain any one in brief.	**07**
		OR	
	(c)	Explain pinMode(), digitalRead() and digitalWrite () functions of Arduino.	**07**
Q.3	**(a)**	Give difference between IPV4 and IPV6 transport protocol.	**03**
	(b)	What is Sensor ? List different types of Sensors used to develop IOT.	**04**
	(c)	Explain Security and Privacy in cloud with respect to IoT based application.	**07**
		OR	
Q.3	**(a)**	Explain CoAP. List the key features of CoAP.	**03**
	(b)	Explain limitation of cloud computing.	**04**
	(c)	List the characteristics of fog computing. Explain fog computing in detail.	**07**
Q.4	**(a)**	Explain MQTT. List the key features of MQTT.	**03**
	(b)	Write Raspberry Pi code to change the brightness of LED.	**04**
	(c)	What is Arduino? Explain features of Arduino architecture.	**07**
		OR	
Q.4	**(a)**	What is PWM? Explain usage of PWM pins with Example.	**03**
	(b)	Write Raspberry Pi code to blink LED ON and OFF.	**04**
	(c)	Explain interfacing of LED with Raspberry Pi.	**07**
Q.5	**(a)**	Explain various application of IoT in Smart City.	**03**
	(b)	Explain IoT security challenges.	**04**
	(c)	Draw and explain architecture of IoT security.	**07**
		OR	
Q.5	**(a)**	Explain various application of IoT in Samrt Home.	**03**
	(b)	Explain any one algorithm for IoT security.	**04**
	(c)	What are the security and privacy issues of IOT? Explain using suitable case scenario.	**07**

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