GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER–VII EXAMINATION – SUMMER 2025

Subject Code:3171108   **Date:14-05-2025**
Subject Name: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
Q.1	**(a)**	Draw the IOTWF Reference Model	**03**
	(b)	Enlist all the desirable qualities of IOT system.	**04**
	(c)	Draw and discuss Physical design of IOT in detail.	**07**
Q.2	**(a)**	Enlist all the essential characteristics of sensors used in IOT systems.	**03**
	(b)	Write a Arduino sketch, to turn a LED ON for 5 secs and turn the LED off for 15 secs. The LED is to be connected to the digital pin D1.	**04**
	(c)	Draw and explain the pin diagram of Arduino UNO Development board, for IOT applications	**07**

OR

	(c)	Draw and describe Raspberry-pi B+ boards functionalities.	**07**
Q.3	**(a)**	Describe Cloud Computing.	**03**
	(b)	Classify Sensors used for IOT systems	**04**
	(c)	Discuss the network layer IPv4 protocol	**07**

OR

Q.3	**(a)**	What do you mean by smart objects ?	**03**
	(b)	What are IOT Gateways ?	**04**
	(c)	What is MAC address of any embedded device.	**07**
Q.4	**(a)**	Discuss various communication Models which can be implemented for any IOT system.	**03**
	(b)	Draw, OSI layers used for communication protocol and give example of each layer.	**04**
	(c)	Discuss SPI, I2C and SPI protocols implementation for Raspberry PI Communication Interfacing.	**07**

OR

Q.4	**(a)**	Elaborate MQTT protocol.	**03**
	(b)	Discuss the BLE protocol	**04**
	(c)	Explain HTTP Protocol in detail.	**07**
Q.5	**(a)**	Elaborate Coap protocol.	**03**
	(b)	Discuss the application of Light Fidelity protocol.	**04**
	(c)	Draw the Security Architecture implementation of IOT System.	**07**

OR

Q.5	**(a)**	What are the goals of security components?	**03**
	(b)	Enlist the challenges faced in imposing secured IOT system.	**04**
	(c)	Classify the IOT systems based on their applications.	**07**

****