

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-VI (NEW) EXAMINATION – SUMMER 2022****Subject Code:3160716****Date:06/06/2022****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 any five IoT applications. Explain any one in details.	03
	(b) What is Sensor ? List different types of Sensors used to develop IOT	04
	(c) Draw and Explain ATMEGA328P Microcontroller Pin diagram.	07
Q.2	(a) Explain MQTT Broker and client.	03
	(b) Differentiate CoAP and MQTT.	04
	(c) Draw and explain IPv4 Header.	07
OR		
	(c) Draw and explain IPv6 Header.	07
Q.3	(a) Explain pinMode(), digitalRead() and digitalWrite () functions of Arduino	03
	(b) Write Raspberry Pi code to change the brightness of LED.	04
	(c) Write arduino code to identify PH value of Soap , Tap water and Lemon juice using PH sensor.	07
OR		
Q.3	(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) Write arduino code to transmit “Hello World – Code to demonstrate BT Communication” string on serial monitor using Bluetooth	07
Q.4	(a) Explain Various application of IoT in Food and Healthcare.	03
	(b) Which are the challenges in IoT with Cloud Computing? Explain any one.	04
	(c) List and explain various types of Cloud Deployment Models, also discuss their merits and demerits	07
OR		
Q.4	(a) Explain Various application of IoT in Retail.	03
	(b) Explain Security in cloud with respect to IOT based application.	04
	(c) Discuss various types of Cloud Computing	07
Q.5	(a) Explain IoT and cyber physical system.	03
	(b) Explain any one algorithm for IOT security.	04
	(c) Draw and explain architecture of IOT security	07
OR		
Q.5	(a) Explain IOT and WSN.	03
	(b) Explain IOT security challenges.	04
	(c) Explain various security issues and need for developing IOT based application.	07
