Total No. of Printed Pages: 2

PRN No.	

PAPER CODE	U313-2105-C-B

December 2023 (ENDSEM) EXAM

TYIT INFORMATION TECHNOLOGY (SEMESTER - I)

COURSE NAME: INTERNET OF THINGS **COURSE CODE: ITUA31205C**

Branch: INFORMATION TECHNOLOGY

(PATTERN 2020)

Time: [1Hr. 30 Min] **[Max. Marks: 40]**

(*) Instructions to candidates:

1) **Figures to the right indicate full marks.**
2) **Use of scientific calculator is allowed**
3) **Use suitable data wherever required**
4) **All questions are compulsory. Solve any one sub question from Question 3 and any two sub questions each from Questions 4,5 and 6 respectively.**

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) Summarize the architectural constraints of REST Communication Model.	[2]	1	2
Q2	a) Complete the following table for the sensor type and technology used in that sensor	[2]	2	3
Q3.	a) Illustrate MQTT: Publishing to a topic and MQTT: Subscribing to a topic with example	[6]	3	3
	b) Compare the working of HTTP vs CoAP using figure	[6]	3	3
Q.4	a) "M2M gateway performs protocol translation to enable IP-connectivity for M2M area networks"- Justify this statement using block diagram of an M2M gateway	[5]	4	4
	b) Demonstrate the role of Open Flow standard interface in SDN	[5]	4	3
	c) What is the use of GPIO pins in Raspberry Pi? Develop a program in python for Piezo Buzzer	[5]	4	3

Sensor	**Technology**
Speed Measuring Sensor	
Occupancy sensor	
Temperature/humidity sensor	
Light sensor	

Q.5	a) Illustrate the different attacks at network layer	[5]	5	3
	b) Discuss various Vulnerabilities of IoT. Illustrate different challenges in securing IoT	[5]	5	3
	c) What is a "thing" in IoT? Give some examples of IoT devices. Also describe basic building blocks of an IoT devices	[5]	5	2
Q.6)	a) List the various type of sensors used in smart parking system. Design and explain the process diagram and domain model for the smart parking system	[5]	6	4
	b) Compare microcontroller and microprocessor on various parameters. Plan various applications where Arduino microcontroller architecture can be used	[5]	6	4
	c) List the various type of sensors used in smart irrigation system. Draw and explain the schematic diagram of smart irrigation system end-nodes	[5]	6	3

Note:[BT Level- 1.Remember 2.Understand 3.Apply 4.Analyze 5.Evaluate 6.Create]