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PRN No.	

PAPER CODE	U314-2105-C (EXE

(AY:2024-25) December 2024 (ENDSEM) EXAM

TY (SEMESTER - I)

COURSE NAME: **INTERNET OF THINGS**

BRANCH: **INFORMATION TECHNOLOGY**
T.Y PATTERN 2020

COURSE CODE: **ITUA31205C**

Time: [1Hr 30 Min]

[Max. Marks: 40]

Instructions to candidates:

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

Q. No.	Question Description	Max. Marks	CO mapped	BT Level
Q.1	a) With the help of diagram explain REST based communication model.	[4]	1	2
	b) With the help of a block diagram, show the protocols used layer-wise in IOT and explain an IOT protocol used at the Link layer.	[4]	1	2
	c) Define Internet of things and briefly explain its characteristics	[4]	1	2
Q2	a) Brief about the roles of cloud computing in IOT.	[4]	2	3
	b) What can be the input to the sensors, exemplify with any four sensors.	[4]	2	3
	c) Differentiate analog and digital sensors, list out examples of each category.	[4]	2	3
Q3	a) Write down the message/communication types used in 1.MQTT, 2.COAP	[2]	3	2
	OR			
	b) What are the alternative terms used for further standards protocols (or technology where is get used) 1. IEEE 802.15.4, 2. IEEE 802.15.1	[2]	3	2
	c) Explain any two COAP message types with diagrams.	[4]	3	3
Q4	a) How are M2M different from IOT systems?	[2]	4	3
	OR			
	b) What is the purpose of Network Function Virtualization?	[2]	4	3

	c) Write a python program for Interfacing LED and Switch with Raspberry-Pi	[4]	4	3
Q.5	a) Which microcontroller is suitable for a smart home system, justify.	[2]	5	3
	OR			
	b) Brief about any two special interfaces of Raspberry-Pi.	[2]	5	3
	c) Compare and contrast ESP8266 and Arduino.	[4]	5	3
Q.6	a) Brief about any two smart systems you find around.	[2]	6	2
	OR			
	b) List out the components required for the Weather monitoring system.	[2]	6	2
	c) Design an IOT based Air Pollution Monitoring system and write a pseudocode for the same.	[4]	6	4

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