

PRN No.	
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PAPER CODE	U315-234C (CSE)
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**(AY:2025-26) December 2025 (ENDSEM) EXAM**  
**TYBTECH (SEMESTER - I)**

**COURSE NAME: Internet of Things**    **Branch: Computer Engineering**  
**(Professional Elective-I)**

**COURSE CODE:**  
**CSUA31234C**

**(T.Y BTECH PATTERN 2023)**

**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) Explain the vision and characteristics of IoT with suitable examples.	[4]	1	Understand
	b) Describe various IoT communication APIs and their significance in IoT architecture.	[4]	1	Understand
	c) Discuss the IoT levels and deployment templates with real-world applications.	[4]	1	Understand
Q.2	a) Compare MQTT and AMQP protocols in terms of reliability, scalability, and QoS levels.	[4]	2	Analyze
	b) Examine the suitability of IPv6 and Bluetooth for IoT communication networks.	[4]	2	Analyze
	c) Examine how IoT protocols differ from traditional TCP/IP Networking Protocols with Examples.	[4]	2	Analyze
Q.3	a) Explain the concept of Machine-to-Machine (M2M) communication and its role in IoT. OR	[2]	3	Understand
	b) Discuss the difference between Arduino and Raspberry Pi with respect to IoT applications.	[2]	3	Understand
	c) Illustrate how sensors and actuators are interfaced with Arduino using a suitable example.	[4]	3	Understand
Q.4	a) Identify key vulnerabilities in IoT systems. OR	[2]	4	Analyze
	b) Explain the process of threat modeling in IoT with an example.	[2]	4	Analyze
	c) Evaluate how data and message security are ensured in IoT communication.	[4]	4	Analyze

Q.5	a) Explain the advantages of Fog Computing over Cloud Computing in IoT.	[2]	5	Apply
	OR			
	b) Discuss the role of Edge Computing in supporting real-time IoT applications.	[2]	5	Apply
	c) Demonstrate how Cloud Middleware supports IoT integration and scalability.	[4]	5	Apply
Q.6	a) Explain IoT applications in smart transportation systems.	[2]	6	Apply
	OR			
	b) Discuss the use of IoT in smart city infrastructure development.	[2]	6	Apply
	c) Design an IoT-based home automation system using cloud services.	[4]	6	Apply