Total number of printed pages: 1

UG/6th/UCSE612

2024

Internet of Things

Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

*Answer **any five** questions.*

1.	a)	Provide an overview of the generic architecture for the Internet of Things (IoT). Describe its different layers and illustrate with an example.	10
	b)	Define the IoT World Forum (IoTWF) architecture for IoT. Explain how it differs from the generic IoT architecture, using an example to support your explanation.	10
2.	a)	Explain the roles of edge computing, fog computing, and cloud computing in IoT. Describe how these paradigms integrate with one another, providing an example to illustrate your answer.	20
3.	a)	Describe the role of artificial intelligence (AI) in IoT-based smart healthcare. Use an example to demonstrate how AI can be applied in this context.	10
	b)	Explain how artificial intelligence (AI) can be integrated into IoT for educational purposes. Provide an example to support your explanation.	10
4.	a)	Describe the application of blockchain technology in IoT-driven supply chains. Use an example to demonstrate how blockchain can improve the supply chain process.	10
	b)	Explain the standard protocol stack used in lossy and resource-constrained IoT environments.	10
5.	a)	Describe the communication model used in IoT deployments for smart agriculture. Use examples to illustrate how this model works in practice.	10
	b)	Explain the concept of connected vehicle technology and how it can enable road safety applications. Provide examples to support your explanation.	10
6	a)	List different sensors, communication and communication units for smart vehicle.	10
	b)	Identify the major challenges facing IoT-based systems. Discuss these challenges in detail.	10
7	a)	Define adversary, attack, and threat models in the context of IoT. Provide an example to illustrate your explanation.	10
	b)	Describe Authentication, Authorization, and Accounting (AAA) and other security requirements in the context of IoT-driven smart healthcare systems.	10

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