Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – May/June 2026

Date: 18-05-2026 **Time:** 01:00pm – 04:00pm

School: SOCSE **(specialization)**	**Program:** Internet of Things	
Course Code: CIT2401	**Course Name:** Blockchain for IoT	
Semester: VI	**Max Marks**: 100	**Weightage**: 50%

CO - Levels	**CO1**	**CO2**	**CO3**	**CO4**	**CO5**
Marks	**26**	**24**	**24**	**26**	

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **10Q x 2M=20M**

1.	Define blockchain technology.	**2 Marks**	**L1**	**CO1**
2.	What is meant by a distributed ledger?	**2 Marks**	**L1**	**CO1**
3.	State any two key features of blockchain.	**2 Marks**	**L1**	**CO1**
4.	Why is security considered a more critical requirement in IoT systems than in traditional network architectures?	**2 Marks**	**L1**	**CO2**
5.	List the effects of unauthorized access to sensor data in an IoT-based healthcare system.	**2 Marks**	**L2**	**CO2**
6.	What is mining difficulty in Bitcoin?	**2 Marks**	**L1**	**CO3**
7.	What is Proof-of-Work (PoW)?	**2 Marks**	**L1**	**CO3**
8.	What is meant by bandwidth efficiency in IoT?	**2 Marks**	**L1**	**CO4**
9.	What are secure IoT higher layers?	**2 Marks**	**L1**	**CO4**
10.	Define data trustworthiness in IoT.	**2 Marks**	**L1**	**CO4**

Part B

Answer the Questions. **Total Marks 80M**

11.	**a.**	Explain blockchain technology and its need in modern digital systems	**20 Marks**	**L2**	**CO1**
	b.	Describe the role of trust in blockchain and how blockchain eliminates the need for intermediaries.		**L2**	**CO1**
		Or			
12.	**a.**	List the key features of blockchain with suitable examples.	**20 Marks**	**L2**	**CO1**
	b.	Explain the types of blockchains: Public, private, and consortium.		**L2**	**CO1**

13.	**a.**	Introduce blockchain technology and analyze how they differ from traditional IoT security requirements.	**20 Marks**	**L4**	**CO2**
	b.	Explain M2M security in IoT environments and how they differ from traditional IoT security requirements.		**L2**	**CO2**
		Or			
14.	**a.**	Explain the concept of modeling faults and adversaries in IoT systems. Discuss its importance in secure system design.	**20 Marks**	**L2**	**CO2**
	b.	Compare IoT devices, embedded devices, and traditional computers with respect to architecture, functionality, and security.		**L2**	**CO2**

15.	**a.**	Explain the basic architecture of a cryptocurrency system with a neat diagram.	**20 Marks**	**L2**	**CO3**
	b.	Describe public and private key cryptography in cryptocurrency systems. Explain how keys are generated and used for security.		**L2**	**CO3**
		Or			
16.	**a.**	Explain the UTXO model in detail. How does it differ from account-based models?	**20 Marks**	**L2**	**CO3**
	b.	Illustrate the structure of a Bitcoin transaction. Explain its components with an example		**L2**	**CO3**

17.	**a.**	IoT sensor data is often unreliable due to noise and attacks. Develop a method to ensure data trustworthiness in such a system.	**20 Marks**	**L3**	**CO4**

	b.	In an industrial IoT setup, devices operate at multiple layers. Propose a security framework that covers both the lower and higher layers of the IoT architecture.		**L3**	**CO4**
Or					
18.	**a.**	A blockchain-based IoT network must agree on data updates. Apply distributed consensus mechanisms to ensure agreement and prevent malicious activity.	**20 Marks**	**L3**	**CO4**
	b.	A developer is writing a smart contract for financial transactions. Analyze the challenges in smart contract languages and verification, and propose solutions to avoid vulnerabilities.		**L3**	**CO4**