PRESIDENCY UNIVERSITY

BENGALURU

End - Term Examinations – December 2025

Date: 10- 12- 2025   **Time:** 1.00pm to 04.00pm

School: SOCSE	**Program:** B.Tech.	
Course Code: CBC2000	**Course Name:** Foundations of Blockchain Technology	
Semester: V	**Max Marks**: 100	**Weightage**: 50%

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

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.	Differentiate about centralized ledger and distributed ledger.	2 Marks	L2	CO1
2.	List down the key characteristics of blockchain.	2 Marks	L2	CO1
3.	State any two purposes of digital signatures in blockchain.	2 Marks	L2	CO2
4.	What is a Merkle root?	2 Marks	L1	CO2
5.	What do you mean by MultiSig (M-of-N) address?	2 Marks	L1	CO2
6.	State the purposes of consensus mechanism.	2 Marks	L2	CO3
7.	How will you calculate faulty nodes in PBFT?	2 Marks	L2	CO3
8.	What is called slashing?	2 Marks	L1	CO3
9.	Mention one benefit of blockchain in healthcare.	2 Marks	L2	CO4
10.	What is the main advantage of a smart contract?	2 Marks	L1	CO4

Part B

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

11.	a.	Summarize the evolution of blockchain technology from early concepts to recent advancements.	20 Marks	L2	CO1
Or					
12.	a.	What is blockchain? Explain the key properties of blockchain technology in detail.	10 Marks	L2	CO1
	b.	What is distributed ledger technology? Illustrate the working principles of distributed ledger technology.	10 Marks	L2	CO1

13.	a.	With a neat sketch of the SHA-256 architecture, explain how SHA-256 ensures immutability in blockchain.	20 Marks	L2	CO2
Or					
14.	a.	Describe the complete lifecycle of a Bitcoin transaction.	10 Marks	L2	CO2
	b.	Discuss in detail the structure, properties, and different types of Bitcoin addresses in blockchain technology.	10 Marks	L2	CO2

15.	a.	Compare and contrast the consensus mechanisms like PoW, PoS, DPoS and PBFT by highlighting their principles, advantages and applications.	20 Marks	L2	CO4
Or					
16.	a.	Discuss how PBFT achieves consensus even in the presence of malicious nodes.	20 Marks	L2	CO2

17.	a.	Differentiate between permissioned and permissionless blockchains with suitable examples.	20 Marks	L2	CO4
Or					
18.	a.	Discuss in detail the role of blockchain in transforming the financial industry.	20 Marks	L2	CO2