

Sixth Semester B.E./B.Tech. Degree Examination, June/July 2026

Block Chain Technology

Time: 3 hrs.

Max. Marks: 100

Note: 1. Answer any FIVE full questions, choosing ONE full question from each module.

2. M : Marks, L: Bloom's level, C: Course outcomes.

Module – 1			M	L	C
Q.1	a.	Explain the various factors supported for the development of block chain technology.	10	L2	CO1
	b.	Explain any three consensus algorithms used in block chain technology.	6	L2	CO1
	c.	What are the limitations of block chain technology? Explain in brief.	4	L2	CO1
OR					
Q.2	a.	Explain in brief the various features of block chain technology.	10	L2	CO1
	b.	List and explain any four generic elements of a block chain.	5	L2	CO1
	c.	What is Electronic cash? Explain the two fundamental issues regarding it.	5	L2	CO1
Module – 2					
Q.3	a.	What is Cryptography? Explain three cryptography primitives with examples in brief.	10	L2	CO2
	b.	Explain the decentralization elements of block chain ecosystem.	6	L2	CO2
	c.	Differentiate centralized and decentralized computer systems.	4	L2	CO2
OR					
Q.4	a.	Explain the following terms with respect to cryptography : i) Confidentiality ii) Integrity iii) Authentication iv) Non repudiation v) Accountability.	10	L2	CO2
	b.	Define Hash function. Explain the desired properties of cryptographic hash functions.	6	L2	CO2
	c.	With an example, explain the Merkle – Patricia Tree.	4	L2	CO2
Module – 3					
Q.5	a.	What is a Wallet? Explain any four different types in brief.	10	L2	CO3
	b.	Define Bitcoin. Explain any four types of transactions found in Bitcoin.	10	L3	CO3
OR					

Q.6	a.	With necessary diagrams, explain in detail the working functionality of a Bitcoin network.	10	L3	CO3
	b.	What is Smart Contract? Explain any four important properties of a smart contract.	10	L2	CO3
Module – 4					
Q.7	a.	With the relevant diagram, explain in detail the different types of state storages used in the Ethereum block chain.	10	L3	CO4
	b.	Explain different types of networks found in Ethereum block chain.	6	L3	CO4
	c.	Explain the operation of EVM with a diagram.	4	L3	CO4
OR					
Q.8	a.	With a relevant diagram, explain different types of transactions found in Ethereum block chain.	10	L3	CO4
	b.	Explain any five different types of precompiled functions supported in the Ethereum Byzantium release.	10	L2	CO4
Module – 5					
Q.9	a.	With a neat diagram, explain the Hyperledger reference architecture.	10	L2	CO5
	b.	Explain in brief the transaction flow in Hyperledger Fabric with a neat architecture diagram.	10	L2	CO5
OR					
Q.10	a.	What is Hyperledger? Explain any eight design principles of Hyperledger.	10	L2	CO5
	b.	With a neat diagram, explain the transaction life cycle of Hyperledger Sawtooth.	10	L2	CO5
