

Duration: 3 hours

[Max Marks: 80]

- N.B.: (1) Question No 1 is Compulsory.  
 (2) Attempt any three questions out of the remaining five.  
 (3) All questions carry equal marks.  
 (4) Assume suitable data, if required and state it clearly.

Q1.	Attempt any four	Marks
a.	Explain Blockchain CAP theorem with relationship diagram of CAP.	5
b.	Discuss Incentive based Engineering in Bitcoin.	5
c.	Explain Hyperledger Fabric Channels.	5
d.	List the key characteristics of ICO.	5
e.	Enumerate the different advantages of Blockchain with Cybersecurity.	5
Q2.	a. Explain different node types and their roles in bitcoin. What is the Extended bitcoin network?	10
	b. Describe the Architecture of Hyperledger Fabric Blockchain.	10
Q3.	a. How to create an account on Metamask (Ethereum Wallet). List and explain different testnets for deployments.	10
	b. Discuss Bitcoin Mining steps to validate the block. What is the difficulty level and how does it calculate in terms of bitcoin?	10
Q4	a. What is consensus? List and explain permissioned and permissionless consensus algorithms.	10
	b. Define Blockchain Technology. Compare different types of blockchain systems.	10
Q5	a. Differentiate between ERC20 & ERC721. Demonstrate NFT with small code.	10
	b. Explain different components of Ethereum in detail.	10
Q6	a. Explain Wallet Technologies in Bitcoin	10
	b. Discuss Structure of a Block, Genesis Block, Linking Blocks in the Blockchain, Merkle Tree.	10