Duration: 3Hours   **[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	
	a.	Explain CAP Theorem.	**5**
	b.	Explain Bitcoing Mning Process in details	**5**
	c.	Discuss Turing completeness EVM	**5**
	d.	Explain Certificate Authority role and working in Hyperledger.	**5**
	e.	Differentiate between PoW and PoS	**5**
Q2.	**a.**	Explain in Block in a Blockchain with terminologies as: Structure of a Block, Block Header Hash, Block Height, The Genesis Block, Linking Blocks in the Blockchain.	**10**
	b.	Explain in detail Bitcoin Node Types and its Roles	**10**
Q3.	**a.**	How to create an account on Metamask (Ethereum Wallet). List and explain different testnets for deployments.	**10**
	b	Explain in detail Blockchain in IoT with real time applications, challenges in implementation and benefits with combining blockchain and IOT technologies.	**10**
Q4	**a.**	Describe the various components in Hyperledger Fabric.	**10**
	b.	Discuss Simplified Payment Verification (SPV) Nodes with its Privacy issue and solution.	**10**
Q5	**a.**	What is Cryptocurrency? List 5 cryptocurrencies based on blockchain Technology. Explain any two cryptocurrencies in detail.	**10**
	b.	Explain different components of Ethereum in detail.	**10**
Q6		Write short note on (any 4)	**20**
	a.	Byzantine Generals Problem Consensus Mechanism	
	b.	UTXO	
	c.	Transaction GAS	
	d.	Hyperledger Blockchain Scalability Challenges	
	e.	STO	

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