

**Duration: 3hrs**

**[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 <b>any four</b>	Marks
a.	What is a block header? How are blocks linked in blockchain?	5
b.	Enumerate the interoperability and scalability issues in Hyperledger fabric.	5
c.	Explain Simplified Payment Verification Nodes. What is the Privacy solution for SPV nodes?	5
d.	List the different advantages and disadvantages of ICO.	5
e.	What is nonce in blockchain and how does it work?	5
Q2	a. What is a Blockchain fork? Differentiate between soft fork and hard fork.	10
	b. Describe the various projects covered under Hyperledger umbrella projects.	10
Q3	a. Discuss the different challenges addressed by blockchain in the Energy sector.	10
	b. Differentiate between Bitcoin blockchain and Ethereum Blockchain.	10
Q4	a. Explain bitcoin mining with the help of a neat diagram.	10
	b. Explain different List and explain the parts of EVM memory.	10
Q5	a. What is an ERC20 token? Explain the steps to create ERC20 tokens.	10
	b. With the help of a suitable diagram explain the life-cycle of a smart contract in Ethereum.	10
Q6	Write short notes on ( <b>any 4</b> )	20
	a. Key features of blockchain	
	b. EOA and contracts address	
	c. UTXO in Bitcoin	
	d. Stock Trading Offering	
	e. Channels in Hyperledger Fabric	

\*\*\*\*\*