

BE VIII (R) | Blockchain - IOT | Winter - 2025 | QP code - 83658

Duration: 3 hours

Date - 23/08/25

[Max Marks: 80]

(1/1)

- 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 the concept of a "distributed ledger" and its significance in blockchain technology.	5
b.	Explain the Unspent Transaction Output in Bitcoin.	5
c.	What are Ethereum Wallets? How are Ethereum accounts created using Metamask?	5
d.	Enumerate the advantages of Blockchain with IoT.	5
e.	Explain the structure of a block in the blockchain. What are genesis block and block height?	5
Q2	a. Compare and contrast public, private, and consortium blockchains. Provide examples of scenarios where each type would be most suitable.	10
	b. What is a smart contract? Explain how smart contracts are deployed and executed on the Ethereum blockchain.	10
Q3	a. Explain the concept of a consensus mechanism in blockchain. b. Compare and contrast Proof of Work (PoW) and Proof of Stake (PoS) consensus mechanisms.	10
	b. Discuss the different advantages and use cases of blockchain with AI and cybersecurity.	10
Q4	a. Discuss the different consensus algorithms used by the Hyperledger Fabric blockchain.	10
	b. Describe the different components of Ethereum in detail.	10
Q5	a. What is an ERC721 token? Explain the steps to create ERC721 tokens with a suitable example.	10
	b. Discuss the different challenges addressed by blockchain in the Energy sector.	10
Q6	Write short note on (any 4)	20
	a. Network Discovery in Bitcoin	
	b. Channels in Hyperledger Fabric	
	c. Byzantine Generals' Problem	
	d. Initial Coin Offering and its variants	
	e. Truffle and Ganache	