

BE SEM VIII (choice based) Summer 2026 INFT

Duration: 3 hours

[Max Marks:80]

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- 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
- Define Blockchain and Distributed Ledger Technology. Explain their differences. 5
 - Discuss Truffle and the various Truffle commands used during the development of smart contracts. 5
 - What is a block header? How are blocks linked in a blockchain. 5
 - Briefly describe the role of Certificate Authority in Hyperledger Fabric. 5
 - Differentiate between Fungible and Non-fungible tokens. 5
- Q2
- How are ERC20 tokens helpful in blockchain applications? Explain the steps to create an ERC20 token. 10
 - Discuss the CAP theorem in the context of Distributed Ledger Systems. 10
- Q3
- Elaborate on Bitcoin Transaction types. Explain the concept of UTXO and how transactions are validated. 10
 - Describe consensus mechanisms and explain Proof of Work (PoW), Proof of Stake (PoS), and Proof of Elapsed Time (PoET). 10
- Q4
- Explain Hyperledger Fabric architecture with a neat diagram. Discuss the different components of the architecture. 10
 - Describe the life cycle of a Smart Contract in Ethereum from development to deployment. 10
- Q5
- Describe Bitcoin mining process and difficulty adjustment mechanism. 10
 - Explain ICO and STO. Discuss different types of cryptocurrencies. 10
- Q6 Write short note on (any 4) 20
- Wallet technologies in Bitcoin
 - SPV Nodes and privacy
 - Metamask and its role in Ethereum
 - Chaincode in Hyperledger Fabric
 - Blockchain in IoT