

(Time: 3 Hours)

(Total Marks: 80)

- N.B.:**
- 1. Question No. 1 is compulsory.**
 - 2. Answer any three out of the remaining questions.**
 - 3. Assume suitable data if necessary.**
 - 4. Figures to the right indicate full marks.**

- Q1. Attempt the following (Any 4):** (20)
- Explain the concept of UTXO model of Bitcoin.
 - Differentiate between hot and cold wallets
 - Explain mining pool and its difficulty.
 - Compare and contrast private and public blockchain.
 - List and explain various types of nodes used in ethereum.
- Q2. Attempt the following:**
- Explain the function of state machine replication. Explain with respect to crowd funding application. (10)
 - Compare BFT and PBFT Consensus in detail. (10)
- Q3. Attempt the following:**
- Compare the role of MSP and Fabric CA. Explain their role in Hyperledger blockchain. (10)
 - Explain ethereum architecture and workflow in detail. (10)
- Q4. Attempt the following:**
- List and explain the types of test networks used in ethereum. (10)
 - Explain different visibility specifier of functions in solidity with example. (10)
- Q5. Attempt the following:**
- What is transaction structure? Explain transaction life cycle in detail. (10)
 - Explain the role of address and address payable in solidity with example. (10)
- Q6. Write short notes on (Any 2):** (20)
- Consensus in Bitcoin
 - Hyperledger Fabric
 - Cryptography in Blockchain
 - Defi Architecture
