t Sem VIJ Comp. R-2019 C-Scheme Nov -Dec 23   1/1/23

(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)
   a. Explain the concept of UTXO model of Bitcoin.
   b. Differentiate between hot and cold wallets
   c. Explain mining pool and its difficulty.
   d. Compare and contrast private and public blockchain.
   e. List and explain various types of nodes used in ethereum.

Q2. Attempt the following:
   a. Explain the function of state machine replication. Explain with respect to   (10)
      crowd funding application.
   b. Compare BFT and PBFT Consensus in detail.   (10)

Q3. Attempt the following:
   a. Compare the role of MSP and Fabric CA. Explain their role in Hyperledger   (10)
      blockchain.
   b. Explain ethereum architecture and workflow in detail.   (10)

Q4. Attempt the following:
   a. List and explain the types of test networks used in ethereum.   (10)
   b. Explain different visibility specifier of functions in solidity with example.   (10)

Q5. Attempt the following:
   a. What is transaction structure? Explain transaction life cycle in detail.   (10)
   b. Explain the role of address and address payable in solidity with example.   (10)

Q6. Write short notes on (Any 2):   (20)
   a. Consensus in Bitcoin
   b. Hyperledger Fabric
   c. Cryptography in Blockchain
   d. Defi Architecture

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