Department of Computer Science and Engineering-SVNIT,Surat
End Semester Examinations,December 2022
B Tech IV(CSE) - VII Semester
Course: Blockchain Technology (CS467)

Date :13-Dec-2022 Time :2:00 PM –5:00 PM Max. Marks:100
Instructions: 1. Answer all questions. 2. Figures to the right indicate max. marks.

Q1	**Answer the following (Any five)** 1. Discuss in detail how Bitcoin wallet addresses are generated. 2. Discuss Hard Fork and Soft Fork in blockchain. Give examples of Bitcoin Forks. 3. Explain howBitcoinand Etherem's token supply is controlled? 4. Bitcoin uses high energy(wastes or invests?). Give your comments considering market/economy size and environment impact. 5. Explain Sybil attack and 51% attack. 6. Discuss challenges and solution directives in Blockchain interoperability. 7. Discuss how blockchains are useful in Supply Chain Management. 8. Discuss Proof of Reserves and its applications/use.	20
Q2	**Answer the following (Any two)** 1. Discuss in detail CORDA. 2. Discuss in detail Hyperledger. 3. Discuss Proof of Work, Proof of Stake and Practical Byzantine Fault Tolerance consensus protocols.	20
Q3	**Answer the following (Any four)** 1. Discuss different types of Stable coins with suitable examples. 2. What are the Web1.0, Web2.0 and Web3.0? What are the supporting technologies of Web3.0? 3. Discuss Metaverse and its applications. 4. Discuss NFT and its applications. 5. Discuss DAO and its use in DeFi. 6. Discuss main improvements of Ethereum 2 over Ethereum and their implications.	20

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Q4 A	Discuss ECDSA and its use. Write the steps for Elliptic Curve Digital Signature generation and verification.	11
Q4 B	**Answer any three of the following:** 1. Explain Constructor in smart contract. 2. Discuss Fall back function with its properties. 3. Explain Immutability in the context of the smart contract. 4. What are the advantages and disadvantages of Elliptic Curve Cryptography? 5. Explain Merkle tree and its advantages in context of the Blockchain technology.	9
Q5 A	Write a smart contract that returns address and balance of owner.	8
Q5 B	**Answer any two of the following:** 1. Explain view function in solidity with example smart contract. 2. Explain smart contract development workflow. 3. Explain Elliptic Curve Diffie-Hellman key exchange protocol.	12

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