R20

IV B. TECH I SEMESTER REGULAR EXAMINATIONS, NOVEMBER - 2023
BLOCKCHAIN TECHNOLOGIES :: USECASES
(CSE – IOT, CYBER SECURITY INCLUDING BLOCKCHAIN TECHNOLOGIES)

Time: 3 hours   Max. Marks: 70

Note : Answer **ONE** question from each unit **(5 × 14 = 70 Marks)**

~~~~~~

UNIT-I

1. a) Outline the structural components of a typical blockchain application and discuss how they contribute to its functionality and security.   [7M]

    b) Provide examples of domain-specific blockchain applications and discuss their benefits and challenges in various industries.   [7M]

(OR)

2. a) Discuss the significance of utilizing application templates in blockchain development.   [7M]

    b) Analyze two significant challenges commonly faced in the adoption and implementation of blockchain technology across industries by proposing potential strategies to address these challenges effectively.   [7M]

UNIT-II

3. a) Compare Solidity, Vyper, and LLL by highlighting their distinctive features and uses in Ethereum smart contract development.   [7M]

    b) Explain the roles of TestRPC, Mist Ethereum Wallet, and Metamask within the Ethereum ecosystem by detailing how they assist in development and network interaction.   [7M]

(OR)

4. Describe the main functions of Ethereum clients like Geth, Parity, and Pyethapp by explaining how they contribute to the Ethereum network.   [14M]

UNIT-III

5. a) Discuss the interactions facilitated by the Mist wallet concerning deployed smart contracts by emphasizing the functionalities available for users.   [7M]

    b) Enumerate the key steps involved in deploying a smart contract using the Geth client by highlighting essential commands and procedures.   [7M]

(OR)

6. a) Detail three primary structural elements within an Ethereum smart contract and their significance in contract functionality.   [7M]

    b) Explain the basic components comprising the structure of an Ethereum smart contract and their respective functionalities.   [7M]

UNIT-IV

7. a) Discuss the advantages of using a blockchain-based interest rate swap DApp by highlighting how it streamlines the swap process and mitigates counterparty risks. [7M]

    b) Outline the benefits of employing blockchain in an Industrial IoT-focused DApp for machine maintenance, emphasizing its role in enhancing efficiency and reducing downtime. [7M]

(OR)

8. a) Explain three advantages of utilizing a blockchain-powered event registration DApp for both event organizers and participants. [7M]

    b) Describe three specific features of a blockchain-based crowdfunding DApp that distinguish it from traditional crowdfunding platforms. [7M]

UNIT-V

9. Explain the fundamental architecture and underlying concepts of Swarm within the Ethereum ecosystem. [14M]

(OR)

10. Describe the incentive mechanisms used in Swarm for encouraging node participation and content hosting. [14M]

* * * * *