KUMARAGURU
college of technology
character is life

B.E DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Seventh Semester

INFORMATION SCIENCE AND ENGINEERING

U18ISE0011**:** Blockchain Technology

COURSE OUTCOMES

CO1: Understand foundational concepts of blockchain and how cryptography is applied.
CO2: Understand the basic concepts of bitcoin and how it works in practice.
CO3: Comprehend the crucial role of mining in bitcoin and analyze ways to improve its anonymity.
CO4: Design, code, deploy and execute a smart contract.
CO5: Trace the evolution of Hyperledger fabric services and the broader blockchain ecosystem.

Time: Three Hours   **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Define the term Ommer blocks.	CO1	[K_2]
2.	Differentiate between hard fork and soft fork.	CO2	[K_2]
3.	List the few consensus protocols used in blockchain.	CO1	[K_2]
4.	Recall about Merkle Tree.	CO2	[K_2]
5.	Outline the steps for joining the node in bitcoin blockchain network.	CO3	[K_2]
6.	What is anonymity in blockchain?	CO3	[K_1]
7.	Identify the merits of smart contracts.	CO4	[K_3]
8.	List out the elements of smart contract.	CO4	[K_2]
9.	Identify the design improvement of solidity.	CO5	[K_3]
10.	Recall about Hashgraph.	CO5	[K_1]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.		Elaborate on different techniques used for securing the chain and verification of the transaction in the blockchain.	16	CO1 [K_2]
12.	a)	Discuss hot and cold storage methods of bitcoins and comment on the situations where each of the methods would be preferable.	8	CO2 [K_3]

b)	Elaborate on account-based ledger and Transaction based ledger. Identify which ledger are used in bitcoin blockchain.	8	CO2	[K2]

13. a) Identify the different mining strategies applied in blockchain.   8   CO3   [K3]

    b) Describe different bitcoin Mixers with their merits and demerits.   8   CO3   [K2]

14. a) How to perform de-anonymization and linking of address in to identity Bitcoin. Explain.   8   CO3   [K3]

    b) Illustrate about process of a block creation in a blockchain with its structure and operations.   8   CO1   [K2]

15. a) Design the smart contract to implement the following scenario as the organization invites the proposal for election of Executive officer.   10   CO4   [K3]

- A chairperson organizes this process.
- The number of proposals is specified at the time of creation of the smart contract.
- The chairperson registers all the voters. Voters including the chairperson vote on the proposal. One vote for one person.
- The winning proposal is determined and announced to the organization.

    b) Explain the basic concept of solidity with an example program.   6   CO4   [K2]

16. a) Elaborate on Interplanetary File System and how does IPFS identify the location of resources instead of HTTP?   8   CO5   [K3]

    b) Explain about decentralized application.   8   CO5   [K2]

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