CY2603 - CRYPTOCURRENCY AND BLOCKCHAIN TECHNOLOGIES
UPC – 2 Marks Questions

S.NO	QUESTIONS
Unit - I	
1	What is a blockchain?
2	Define a block in a blockchain.
3	Explain the concept of blockchain as a public ledger.
4	How does a transaction work in a blockchain?
5	What is the longest chain rule in blockchain?
6	What is the role of a hash function in blockchain?
7	Explain the properties of a cryptographic hash function.
8	What is a hash pointer?
9	Describe the structure of a Merkle tree.
10	What is the significance of a hash pointer in blockchain?
Unit - II	
1	What is a cryptocurrency?
2	Explain the basic principles behind the creation of a cryptocurrency.
3	What is the role of a miner in Bitcoin?
4	What is double spending, and how is it prevented in cryptocurrencies?
5	What is the purpose of the Bitcoin scripting language?
6	What is the role of the Bitcoin P2P network in transaction validation?
7	How are Bitcoin transactions verified by miners?
8	Describe the process of block mining in Bitcoin.
9	How does Bitcoin's block propagation work?
10	What is the structure of a Bitcoin transaction?
Unit - III	
1	What is Proof of Work (PoW)?
2	Explain the Hashcash PoW algorithm used in Bitcoin.
3	How does Proof of Work help secure the Bitcoin network?
4	What are the limitations of the Proof of Work consensus mechanism?

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5	Explain the concept of mining difficulty in Bitcoin.
6	What are Bitcoin mining pools and why are they used?
7	Discuss the attacks on Proof of Work in Bitcoin.
8	What is the monopoly problem in Proof of Work consensus?
9	Explain Proof of Stake (PoS) and how it differs from PoW.
10	What is Proof of Burn, and how does it contribute to consensus?

Unit - IV

1	What is Hyperledger Fabric, and what are its key features?
2	Describe the architecture of Hyperledger Fabric v1.1.
3	What is chaincode in Hyperledger Fabric?
4	How does Ethereum differ from Bitcoin in terms of functionality?
5	What is the Ethereum Virtual Machine (EVM), and how does it work?
6	Explain the concept of Ether and its role in the Ethereum network.
7	What is Gas in Ethereum, and how does it relate to transaction fees?
8	What is Solidity, and how is it used in Ethereum?
9	What is the Mist browser, and how does it interact with Ethereum?
10	Explain how Ethereum handles smart contracts.

Unit - V

1	What are smart contracts, and how do they work in blockchain applications?
2	What is Truffle, and how is it used to design and deploy smart contracts?
3	Explain what a Decentralized Application (DApp) is and its advantages.
4	What are Non-Fungible Tokens (NFTs), and what are their applications?
5	How is blockchain used in Supply Chain Management?
6	What are the benefits of using blockchain in healthcare?
7	How does blockchain contribute to the voting system?
8	What is the role of blockchain in intellectual property protection?
9	What are the advantages of blockchain in financial services?
10	How is blockchain technology used in cross-border payments?

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