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BTECH
(SEM VI) THEORY EXAMINATION 2021-22
BLOCKCHAIN ARCHITECTURE DESIGN

Time: 3 Hours

Total Marks: 100

Note: Attempt all Sections. If you require any missing data, then choose suitably.

SECTION A

1. Attempt all questions in brief.

2*10 = 20

Qno	Questions	CO
(a)	Name the two types of records that are present in the blockchain database.	1
(b)	Give the key features of the blockchain.	1
(c)	Describe the role of encryption in blockchain.	2
(d)	Is it possible to modify the data once it is written in a block? Justify.	2
(e)	Define Double Spending problem.	3
(f)	Quote KYC.	4
(g)	State the characteristics of the Cryptography.	5
(h)	Why blockchain is considered as a trusted approach?	2
(i)	List the limitations of the blockchain.	1
(j)	What is 51% attack?	3

SECTION B

2. Attempt any three of the following:

10*3 = 30

Qno	Questions	CO
(a)	Explain the distributed ledger technology. How is a blockchain ledger different from an ordinary one?	1
(b)	What are the various types of consensus protocol used in permissioned blockchain networks?	2
(c)	Mention the benefits of blockchain in KYC process.	4
(d)	Discuss Hyperledger Composer Tool. What are its components?	3
(e)	Explain SHA-256 hashing algorithm.	5

SECTION C

3. Attempt any one part of the following:

10*1 = 10

Qno	Questions	CO
(a)	Discuss the types of blockchain. Distinguish between blockchain and database.	1
(b)	Elaborate the working of Merkle trees.	1

4. Attempt any one part of the following:

10 *1 = 10

Qno	Questions	CO
(a)	Explain Permissioned blockchain. Give the design goals, consensus protocols for permissioned blockchain.	2
(b)	Discuss PoW algorithm with its advantages and disadvantages.	2

5. Attempt any one part of the following:

10*1 = 10

Qno	Questions	CO
(a)	Explain the Hyperledger Fabric architecture.	3
(b)	Explain the transaction flow diagram of consensus with an example.	3



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6. Attempt any *one* part of the following: 10*1 = 10

Qno	Questions	CO
(a)	Discuss in detail the application of blockchain in financial software and systems with respect to settlements.	4
(b)	List out the problems associated with traditional supply chain management. How are these problems overcome by the decentralization of supply chain management?	4

7. Attempt any *one* part of the following: 10*1 = 10

Qno	Questions	CO
(a)	What are the key principles in blockchain that are helpful in eliminating the security threat that need to be followed?	5
(b)	Describe the role of cryptographic digital signature in blockchain network.	5

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