



BTECH
(SEM VII) THEORY EXAMINATION 2023-24
BLOCKCHAIN ARCHITECTURE DESIGN

TIME: 3 HRS**M.MARKS: 100****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A****1. Attempt all questions in brief.**

Qno.	Question	Marks	CO
a.	Define distributed ledgers.	2	1
b.	List the types of records that are present in the Blockchain database.	2	1
c.	Define the way to verify the accuracy of new transactions that are added to a Blockchain.	2	2
d.	List the general types of Blockchain.	2	2
e.	Mention the key design features of Hyperledger Fabric model.	2	3
f.	Differentiate between Blockchain and hyperledger.	2	3
g.	List the feature of Blockchain that make its application useful in financial services.	2	4
h.	Describe how Blockchain eliminates the problems associated with KYC.	2	4
i.	Name some use cases for Blockchain application in identity management.	2	5
j.	Mention the cryptographic algorithms used in Blockchain.	2	5

SECTION B**2. Attempt any three of the following:**

a.	Explain the architecture of Blockchain. Also define blocks in Blockchain architecture.	10	1
b.	Define the need of consensus mechanism in Blockchain. Also explain different types of consensus algorithms used in Blockchain.	10	2
c.	Define policy. Discuss the policies that are needed in Hyperledger.	10	3
d.	Discuss the security and privacy issues in Blockchain.	10	4
e.	Explain how Blockchain uses cryptography and how cryptography provides trustless environment in Blockchain network.	10	5

SECTION C**3. Attempt any one part of the following:**

a.	Explain the key principles of Blockchain that are helpful in eliminating the security threats that need to be followed.	10	1
b.	Explain the security and privacy protocols used in Blockchain architecture.	10	1

4. Attempt any one part of the following:

a.	Explain Merkle root. Explain the way it is implemented in the Blockchain.	10	2
b.	Explain Proof of Work (PoW). Also differentiate between PoW and PoS.	10	2

5. Attempt any one part of the following:

a.	Describe Hyperledger Fabric. Mention the key design features of Hyperledger Fabric model.	10	3
b.	Briefly discuss the Hyperledger Fabric architecture.	10	3

6. Attempt any one part of the following:

a.	Discuss application of Blockchain in financial software and systems with respect to KYC (Know Your Customer).	10	4
b.	List the problems associated with traditional supply chain management. Discuss the role of decentralization in supply chain management to overcome these problems.	10	4

7. Attempt any one part of the following:

a.	Explain government adoption of Blockchain in healthcare sector and energy resource management in smart city.	10	5
b.	Discuss the role of Blockchain for government with respect to digital identity, land records and other kinds of record keeping.	10	5