Printed Pages:2 **Sub Code:KCA-041**

Paper Id: 236596 **Roll No.** | | | | | | | | | | |

MCA
(SEM IV) THEORY EXAMINATION 2022-23
BLOCKCHAIN ARCHITECTURE

Time: 3 Hours ***Total Marks: 100***

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

SECTION A

1. Attempt *all* questions in brief. 2 x 10 = 20

(a) What is the importance of blockchain?
(b) List out the contents of block in blockchain.
(c) Define permissioned blockchain.
(d) What happen if one leader node fails to send the heartbeat?
(e) Define the Hyperledger fabric.
(f) Is smart contract and chaincode different?
(g) Is blockchain helpful in Invoice Discounting?
(h) Explain the limitations of insurance industry.
(i) List out steps to create digital identity.
(j) List out 2 major issues with land registration in India.

SECTION B

2. Attempt any *three* of the following: 10x3=30

(a) What is role of hash in blockchain and how it is calculated?
(b) Illustrate the scalability aspects of blockchain.
(c) Discuss the process of transaction flow with the help of an example in Hyperledger.
(d) How blockchain reduce the effort of KYC using blockchain?
(e) Discuss the current scenario of Public Distribution System.

SECTION C

3. Attempt any *one* part of the following: 10x1=10

(a) Discuss the shift from Hashchain to Blockchain.
(b) Explain the bitcoin and its features.

4. Attempt any *one* part of the following: 10x1=10

(a) Discuss the distributed consensus with its properties. Also discuss types of failures in distributed consensus.
(b) Discuss the PAXOS algorithm for permissioned blockchain.

5. Attempt any *one* part of the following: 10x1=10

(a) Demonstrate role of peer and ordering identity in Hyperledger.
(b) Illustrate the multi-organizations used in Hyperledger Fabric.

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6. Attempt any *one* part of the following: 10x1=10

(a) Identify the process of Invoice discounting through blockchain.
(b) Analyze Challenges in Supply Chain and role of blockchain in Supply Chain.

7. Attempt any *one* part of the following: 10x1=10

(a) Illustrate the Decentralized identity with the elements of it. Figure Out the benefits to use blockchain.
(b) Outline Blockchain use cases in Government record keeping.

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